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A Study of the Characteristics of Primary Reading Materials

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A STUDY OF THE CHARACTERISTICS OF PRIMARY READING MATERIALS

BY

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VITA

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CONTENTS

LIST OF TABLES

TABLE PAGE

CHAPTER I

NATURE AND STATEMENT OF THE PROBLEM

Introduction

Reading failures often go undiscovered for a sufficiently long time to make their correction one of extreme difficulty if at all possible under ordinary classroom conditions. A mentally handicapped child reading up to his level of possible achievement is not a reading failure but there are innumerable pupils who fall below their mental level in reading achievement. Causes for such retardation and remedies for such deficiencies have been perplexing educators for many years. Ever since reading has been regarded as a sum total of specific skills rather than a general ability, experimentation has discovered many if not all of the causes of reading disabilities and pointed the way that many of these deficiencies may be prevented.

Perhaps reading is more fortunate than other subjects in the curriculum because of the great amount of research work that has been done in this field. As a result one would expect to find a technique of teaching reading so well developed that a minimum of pupil failures would result. Apparently such is not the case. Julia M. Harris says (1927, 41:46),

> Our educational theories regarding the teaching of reading are possibly a half century ahead of

> common practice. If the average teacher could approximate in practice the best theories held on the teaching of reading our schools would probably advance a generation in a single year .... Our knowledge of the teaching of reading has advanced tremendously within the last decade. This enlightenment is the result of educational research.

Of a similar nature but more specific in character is the following statement taken from the explanatory remarks preceding an outline for a supervisory program of reading in Florida. (41:37)

> Reading properly taught in the early grades would mean that little remedial work would be necessary in the later grades. Most of the bad reading habits ... are due to poor training in the lower grades.

Granting that the results of research in the field of reading are abundant, adequate, and of sufficient authority to insure proper leadership, why has the teaching body failed to use this most important information?

This lag of the teaching body may be due in general to the inertia of a large body of followers keeping up with the leaders, but more specifically it is due to either or both of the following causes: the inability of teachers to become acquainted with the literature in the field of primary reading; or to the inability to make practical application of known results of research because of the lack of proper interpretation and organization. (1930, 57:37)

> Within the field of education the advance in administration and research has already far outstripped the advance in interpretation, so that a vast gap separates the frontier thinkers from the mass of their fellows.

This lagging process can apparently be speeded up by a more complete organization and interpretation of existing research material. Here is a problem which offers chances of making a concrete contribution, however small, in the field of reading.

Nature of the Problem

In an effort to define and delimit the problem a relatively large body of material dealing specifically with reading disabilities was studied. Specific reading disabilities lists of William S. Gray, John A. O'Brien, Edward W. Doleh and others, were tabulated and compared. In addition other items pertaining to reading disabilities mentioned by other authors were added to the tabulation. The entire tabulation was listed under ten main headings and finally reduced to three after several revisions.

After the outline was completed it was found that the three main divisions were fundamentally the same as the three major reading objectives given in the Twenty-Fourth Yearbook of the National Society for the Study of Education. The analysis of the specific causes of reading disabilities resulted in the following threemain divisions: (1) motivation and reading interest, (2) reading materials, and (3) reading habits and skills. The three widely known major objectives of reading given in the Twenty-Fourth Yearbook and listed here for comparison are (58; 9-16), (1) rich and varied experience through reading, (2) strong motives for, and permanent interests in reading, and (3) desirable attitudes and economical and effective habits and skills. The appearance of disabilities therefore is not confined to any particular phase of the teaching of reading but occurs throughout all the

major divisions of an acceptable technique.

The Problem

As the characteristics of materials have considerable influence on the ease of motivation and the permancy of interest and on the development of reading skills and habits, the writer chose this phase of the large general problem for investigation and study. It was quite evident that any attempt to cover the scientific literature on reading in general would involve too much material. Textbooks constitute a most important element in the learning-to-read process. This fact, coupled with the knowledge that the primary period of reading instruction is the most vital for a properly maturing reading ability, led to the delimitation of the problem. The study will be concerned with the question as to: What characteristics should be embodied in the textbook materials of primary reading in order to best prevent the development of reading disabilities?

Method of Obtaining Data

The data in the main were obtained from studies which had been published after 1925. In order that no material of impertance printed prior to this date would be omitted, a careful study was made of William S. Gray's Summary of Reading Investigations published in 1925. When occasion demanded experiments completed before 1925 were included in the study. The yearly Summary of Reading Investigations by Dr. Gray formed the bibliographical backbone for locating the experiments summarized. Many references were obtained from bibliographies contained in individual studies. In addition indexes of periodical literature such as Readers Guide and the Education

Index contributed to the completion of the bibliography.

An effort was made to limit the incorporated material to experimental studies. In some instances it was found necessary to use discussions or statements that were not founded primarily on experimental proof. The many experimental studies and articles on reading were divided into groups according to the predominating nature of the individual reports. Quite often studies contained material on several phases of characteristics of reading materials and so it is not uncommon to find one report partly summarized in several chapters. In addition to facts, arguments, and conclusions, obtained from experimental studies it was felt that teachers could furnish other data pertinent to the problem. This data could also serve as a check on how the opinions of teachers agreed with the conclusions made possible by the summarizing of the results of scientific experimentation.

Method of Using Questionnaire

The need for obtaining information from teachers required the use of the questionnaire. After the final form of the questionnaire, or check list, as it is called on the printed form, was decided upon a trial evaluation showed no need for any important changes.

It was felt that the nature of the check list made it inadvisable to use a follow-up. A follow-up would have resulted in more responses but would have undoubtedly lowered the reliability of the data. Unless the teacher felt perfectly free and willing to participate in the evaluation of the check list the answers would be of little value. A follow-up would

stimulate the routine checking of answers with little consideration for the correctness of the reply.

To compensate for the possible loss in returns through the lack of a follow-up many more check lists were sent out than would ordinarily have been necessary. Approximately 350 copies were sent to teachers to be evaluated and returned while approximately 80 copies were sent to the principal's offices to be filed, if desired, for future reference. Appearing as part of each check list was a letter of transmittal to the teacher asking for her cooperation and promising an individual return of the summarized results. The check lists were sent to the principal of each school with a letter of transmittal addressed to the principal askinghis cooperation in passing out the check lists to the primary teachers. One month's time was allowed for the return of the check lists. The cities and schools participating and the number of responses returned appear in Table XXVIII on page 108.

CHAPTER II

CONTENTS OF READERS

General Trends

A study of the historical development of reading shows several interesting changes. Three stages may be noted. The first, roughly placed as the period ending about 1890, was characterized by the presentation principally of topics related to morals and religion. The second was dominated by the ideal of literary quality. In this connection William S. Gray says (1925, 37:180), "It is evident that one of the dominating aims of the authors of sets of readers has been to provide children with opportunity to read good literature." The idea that reading materials should be of necessity good literaturemay still prevail in some quarters and so it is difficult to even approximate the ending of the second period. However, for the sake of being specific it may be placed at about 1930. In the third or present stage, newer conceptions of what constitutes good reading material have been replacing the dominant idea of good literary quality.

Miriam B. Huber (1927, 45:299), in an experimental study concerning interest in poetry, found that many of the best liked selections might not be classified as the best literature but, "Perhaps they do not need to be, as the idea of 'best literature' may be conventional and traditional and not genuine." Attacks on the abuse of the use of "good literature" content in

books, after the compilers have rewritten and reconditioned the stories, has led to a more sane consideration of this much-used phrase. Fannie W. Dunn says concerning the use of this trite expression that,"... no justifiable criterian of literary merit has been set up in making these selections." (1921, 23:20)

Much progress has been made in getting away from the belief that the controlling principle of selection should be literary merit. Buckingham was of this opinion. (1924, 12:18-21) He thought that literature was too subtle and mature for teaching reading and that being introduced before it was appreciated it was undervalued and actually disliked. Regenia R.Heller, working under the direction of Dr. Courtis, was one of the pioneers in developing reading materials not based specifically on literary merit. She believed that, (1921, 42:153)

> In attempting to train children to read, schoolmen have usually made the mistake of beginning with the type of reading whose effect is most difficult to trace; namely, reading involving aesthetic appreciation.

Publishers apparently do not believe that in order to make a textbook acceptable it has to be prefaced with statements to the effect that the material contained therein is good literature. Dan forth made a study of the prefaces and the introductory material in sixty-five textbooks in reading to determine what purposes governed the selection and arrangement of material. (1933, 17:432) It was found that the most important purposes were based on the considerations of value and interest to children. Material was also provided to develop powers, abilities, and desirable

characteristics in children. Other expressed purposes were found but there was no emphasis placed on the desire to provide "good literature."

In all probability the disrepute into which literature has fallen in relation to instructional materials has come about through an indiscriminate use of the term, "good literature." Individual conceptions of what is "good literature" are at variance in many instances. In many cases industry was overly eager to commercialize the rising popular demand for literature and so introduced much inferior material that was called literature. In any event modern educational thought has helped us to clarify our thinking so that the insistence now is for well-written, interesting, and appropriate material which may or may not be called literature. Buckingham states his position clearly on this point. (1924, 12:20)

> We shall take the position that in the teaching of reading, literary material by virtue of the fact that it is literary has no more place than history material or geography material or science material, and that all these types, if they are included, must possess as a basis of inclusion the qualities which serve best the purposes of teaching children how to read.

Of interest in connection with the question of literary trends is a study made by Thompson. (1933, 75:167) "It has often been stated that literature follows social changes instead of leading them," and in consequence Thompson had expected to find considerable evidence of the industrial and scientific influence. "It would be reasonable to suppose that books for children would reflect these changes very decidedly, but a study recently completed by the writer indicates that such is far from being the case." A sampling made from more than one thousand books specifically written for

children showed that (75:171) (1) the religious element had practically disappeared by 1900; (2) nature subjects gained their greatest frequency between 1900 and 1910 but by 1930 they were almost negligible in number; (3) folklore literature maintained a rather high position of influence from 1890 to 1920 when it suddenly climbed to a commanding position; and (4) that science and industrial literature is apparently decreasing in influence from its high positionof 1920, to a position slightly inferior to that of folklore.

Thompson's study shows that informational seledtions are not included to any great extent in materials of reading for children. It is hardly possible that there was too much scientific and industrial material. In fact, there was not enough, and yet there has been a decided decrease in its use. Apparently, critics became convinced that the pendulum had swung too far in favor of factual material and so the movement away from that type of selection may be noted. The weight of the scientific influence in children's books has been insignificant compared to its influence in the general social scheme. There is evidence that scientific and industrial materials are becoming less significant. It is impossible to have factual material unless great quantities of it are drawn from the fields of science, industry, and nature. With nature, science, and industry, only able to show an insighificant contribution to the materials of reading, the opinions and proofs of authorities, that factual material is desirable and necessary in a well-balanced reading program, are apparently going unheeded.

Vinal made a study of first grade readers and severely critised book

makers for not including more animal and nature stories. (1918, 82:379)

> The writers of first grade readers have the preconceived idea that the unreal is a necessary preparation for literature. This inherited custom hinders the writers from proceeding in a natural way, and so they distort the mind of the child for months with the literary method of the savage.

Buckingham predicated that factual material would develop to be better than most material in use in 1924, and so gave a strong implication of the value of such material for instructional purposes. (1924, 12:115) Factual material about industry, civics, health, and nature, was included by Smith, in her experimental determination of new first grade material because she believed, (1928, 70:80) "... that in this day of realistic teaching a steady diet of fanciful tales would tend to give the child a distorted idea of the real life about him, ..." Gates advocates, as a result of experimentation, the inclusion of different types of informative material, in a well-balanced reading program. (1930, 31:114)

Contents of Readers

Anderson and Keeler made a study of Kansas primers and first grade readers. (1927, 1) One conclusion reached by them was that eighty per cent of the materials in primers was "unorganized" or of "unreal" literary value. Here is a repetition of the debatable question of literary quality. It would be difficult to determine just what is meant by "unreal" literary value. If material fails to conform to acceptable standards its weaknesses should not be obscured by the use of such a conventional term as poor or "unreal" literature. A criticism to be useful should be specific. A vague criticism contributes nothing to the solution of any problem. Other more

specific findings were:

1. Approximately one third of contents of first and second readers was poetry.

2. Materials were classified under "animals, "adults" and "inanimate things."

"Inanimate things" in first and second readers and "adults" in second readers were especially prominent subjects.

3. Social elements emphasized were kindness, bravery, religion, patriotism, affection, duty, honesty, politeness, and gratitude.

A study concerning the amount of space devoted to historical material in twenty-six primary readers was made by Dawson. (1929, 18:765) She reports very little historical material in primers and first readers. In second readers the amount increases until in third readers 6.8 per cent of their space is devoted to such material. The study would have proved of more value if it had included an attempt to find out whether the percentage of historical material in primary books was increasing or decreasing.

Starch reported a study on the contents of readers based on an analysis of ten books in each of the eight grades. The following table summarizes the findings concerning the nature of the material included in readers of the primary grades. (1921, 71:147)

Table I *

Average Percentage of Each Class of Material

in the Ten Readers of Each Grade

Class ofContent	Grades 1	2	3
Animals	28.8	21.5	10.0
Boys and Girls	16.8	18.5	13.1
Folklore	15.4	13.3	2.1
Fables	3.4	5.4	8.4
Plants	5.8	4.1	7.1
Elements (Wind, etc.)	2.4	1.2	4.7
Fairy Tales	1.9	13.3	15.4
Geography and Travel	0.6	0.1	4.6
History and Patriotism	0.3	1.0	10.1
Poetry	15.4	17.4	13.4

*Rearranged from Starch's Data. Grades IV to VIII Omitted. Classes of Low Per Cent Omitted.

Starch found that the amount of duplication of specific selections in three or more of the ten books of a given grade was very small. Also, that materials related to "animals,""Boys and girls," and "poetry" constituted over three fourths of the contents of lower grade readers. The fact gained from such a general percentage is often misleading unless one takes into consideration the wide variation found in the individual books studied. An example of such wide variation is shown in the division of materials listed under "boys and girls," where in fourth grade readers this material varied in amount from 30.8 per cent in one reader to zero per cent in another. (71:151)

> There is no approximation to an accepted amount of material in a given class which authors agreeshould be in a book .... If material of certain types is more interesting or appropriate or valuable than material of other types, then there ought to be greater uniformity in the proportions of the different classes of content.

Vinal tabulated the following types of content, out of a total of seventeen, to be the most numerous. (1919, 82:372)

Table II*

Frequency of Use of Three Types of Material

in Thirty Three First Readers

Content	True to Nature	Personification	Fairy Type	Total Frequency	Number of Books
Animals	120	126	93	339	33
Plants	57	22		79	17
Geography	41	22		63	18
Special Days	14			14	10

*Rearranged from Vinal's Data.

Gates in a study of twenty one primers found the following types of content. (1925, 29:584-85)

Table III*

Total Frequency of Use and Types of Content

in Twenty One Primers

Types of Content	Totals
Aesops and Other Fables	27
Folk Tales	478
Miscellaneous Poems and Rhymes	37
Miscellaneous Stories	
Based on Mother Goose	361
About Animals	501
Festival Stories	27
Miscellaneous	388
Mother Goose and Old Nursery Rhymes	240
Riddles	9

*Rearranged from Gates' Data.

Out of a total of nine different types of material only three primers included as many as seven. Nine other primers had four or five different types and one primer contained material exclusively of the one type, folk tales. Although this one book contained all folk tales, six others contained no folk tales at all. The entire group of books included a very small amount of purely informational material. In general animal stories were the most popular with folk tales taking a very close secondposition. Mother Goose and nursery rhymes were also popular types of materials as determined by this study.

A most comprehensive study in the scientific determination of the

content of a course of study in reading was made by W.L. Uhl. He enlisted the aid of more than three thousand teachers in forty nine cities, from grades one to eight, to evaluate several thousand selections in an attempt to determine the desirable and undesirable qualities of reading materials. As a check on teacher's judgments, based on certain selections, were given to five hundred and twenty nine pupils in grades three to eight inclusive. Much of the material met with universal approval and much of it proved unsatisfactory. The undesirable qualities included the following: (1) too mature, (2) too difficult, (3) lack of action or plot, (4) unreal, (5) depressing, (6) monotonous, (7) not well told, (8) too long or too scrappy, (9) too abstract, (10) and poor literary style. The desirable qualities are listed in the following table. (1921, 80:125)

Table IV*

Relative Frequencies of the Most Important Qualities of Reading Selections

Quality	Grades 1	2	3
Dramatic action, Adventure, and Heroic	14	19	23
Interesting action (not dramatic)	11	11	9
Humor	7	6	6
Fairy and supernatural	9	13	13
Interesting characters, home life or child life	7	6	8
Interesting problems or character study	3	5	7
Kindness and faithfulness	8	9	10
About animals and personification	16	13	10
Availability for dramatization	10	8	7
Interesting repetition	14	9	5
Interesting information	1	1	2

*Grades IV to VIII of Uhl's Data Omitted.

Uhl concluded that the appeal of those qualities listed in the table was widespread and where provision was made for comprehension of content in the different population groups very little variation in interest was found in the given selections. A most valuable fact in connection with the above table is that it is not a mere tabulation of qualities found in reading materials but an evaluated tabulation based on the best liked selections as reported by teachers. An important conclusion reached by Uhl was that the informational type of material, written especially for children, not only proved successful but had ample social justification.

Woody, in a study of fifteen second grade readers found among other things that; (1920, 86:46 9) 67.9 per cent of the material was imaginative, 32 per cent instructional, 15.3 per cent of the subject matter was devoted to real nature stories, and 51.8 per cent was devoted to folklore, fairy tales, and myths.

Duplication of Materials

A number of studies have been made concerning the duplication of selections in reading books. Usually the study is confined to duplication in books within a given grade. Kibbe (1927, 50), however, found a large amount of duplication from grade to grade in fourteen different series of books for grades three to eight. Hosic (1920, 43), Woody (1920, 86), and Stone (1920, 73), found comparatively large amounts of duplication. Starch, on the other hand, while concerned chiefly with the study of the quality and nature of the content, found that (1921, 71:151), "The amount of specific content, such as selections, stories, poems, etc., common to three

or more of ten books for a given grade is very small." This would tend to indicate a different standard for the determination of what a duplication consisted or a different basis of interpretation. In general, duplications recorded in the various studies were very numerous. A great range was found in their number and variety. Teal recorded (1926, 74:359) the lowest number of selections duplicated in any given book as five while the highest was sixty. Stone found wide variations in the number of selections duplicated. In addition, the number of pages devoted to any given duplication varied greatly in number. (73:707) An example is the duplication of two different selections in two books. In one book these two selections required six and one-half pages while in the other they occupied nineteen pages. Phillips made a study of duplication found in Texas state-adopted readers for the purpose of distributing books to counties on the basis of types and amounts of duplication. In general her findings agree in both amount and variety with similar studies. In conclusion she expressed (1929, 63:61) "the need of making a systematic attack on duplication." A study by Cooper finds (1932,15:542) "... the elimination of the greater proportion of overlapping which was prevalent a few years ago." However, with the exception of myths, old tales, and nursery rhymes, stories or poems were not regarded as repetitions unless they were written by the same person. Cooper defends her procedure and findings by stating,

> This difference in procedure would not have changed the results to any noticeable extent as such stories did not occur with great frequency.

In the majority of cases duplication comprised only about 5 per cent of the book. The exceptions were a duplication of 34 per cent in one reader and

10 to 25 per cent in thirteen readers. (15:545)

> However, in every case in which repetition was more than 10 per cent, the books are reprints of readers first published no less than eight years ago. Little overlapping was found in readers which have recently been put into print; in many instances there was no repetition.

This study was based on the analysis of sixteen sets of readers totaling ninety five different books. The author concludes that little concern need be given to the problem of repetition. The main consideration in choosing supplementary readers, should be one of suitable material from the standpoint of interest and educational and cultural value. The problem of duplication has received attention because of the unfavorable psychological effect created in the mind of the young reader by working with material which is recognized as already having been used, as well as from the standpoint of economy. Although the duplication may not be an exact reproduction of material found in another book it is easily recognized by the pupils. On the other hand, to say that all duplication is harmful would be exceedingly doubtful. Children call for the repeated telling of various stories and obtain much enjoyment from the repeated reading of favorite selections. Uhl found that "interesting repetition" ranked very high in first grade as a desirable quality of reading materials, but that by third grade it ceased to be an important factor. This repetition took place within a given selection and presumably was that of an idea, phrase, or clause, but it points to the possibility of the repetition of an entire selection being just as desirable.

However this sort of duplication, more properly termed repetition,

may be more efficiently taken care of through the initiative of the individual class or teacher, by the rereading of selections rather than by the reappearance of the selection in another book. In this manner no effort is made to introduce old material as new and so any bad psychological effect of duplication is avoided. The degree and kind of repetition is entirely and individual or class matter and will vary greatly from time to time. There is apparently no justification for the inclusion of duplicated material at any time.

As evidenced by the literature in the field, the problem of duplication should be solved by eliminating practically all duplication from all readers. The selections of undeniable value and interest contained in one series* would be unavailable to users of other series except for the prohibitive alternative of buying many sets of books. The avoidance of duplication from series to series would tend to thin out the desirable materials of reading with inferior material invented especially to avoid duplication.

It is not desirable to have supplementary readers that contain many stories found in the basic reader. Studies showing a great amount of duplication have led to criticism of the publishers and to a growing sentiment that a book containing large amounts of duplicated material is inferior in quality. Such a book might be of exceptional merit due to expert compilation and treatment but because of duplication fail to receive due recognition. Hosic apparently found less duplication than he had expected to find and interpreted this fact to mean that it showed a lack of consensus of opinion as to what children should read. He states, (1920, 43:180)

> The effort has apparently been to get something "different." Yet these are basal, not supplementary readers. No educational principle of inclusion or exclusion can be traced which is in any sense common to as many as half of the series.

Gray comments on this interpretation of the study with, (1925,37:180)

> It is possible, on the other hand, that the authors of these books made conscious effort to avoid duplication.

Perhaps this latter viewpoint is more true, but if so, it does not follow that publishers, perhaps due to pressure from the educational field, are fundamentally correct in their endeavor to avoid duplication of materials in readers from series to series.

The practice of buying a basic reader from one series and supplementary readers from other series, originally caused by the lack of sufficient supplementary material in any one set of books, has led to the problem of duplication. Stone (73:703) noted six phases or characteristics of contents of readers and of the six, "duplication of subject material" was noted as being considered by many the most important. Attempting to solve this most important problem by trying to avoid all duplication in all readers will tend to produce inferior materials. It is impossible to avoid duplication of such authors as Longfellow, Stevenson, Scott, Tennyson, and others, whom Hosic found to be sources most frequently mentioned. (1920, 43-180) If absolute duplication is not possible or desirable it would be difficult to say what per cent of the content it would be permissible to duplicate from series to series.

There is one possible solution and that is in the avoidance of

duplication in any given series. This would allow more concentration of materials, giving a rich variety of worthy selections based on evidence of experimental success. It would also make available to all pupils, regardless of the series of readers which they are using, the most noteworthy literature which has proved of value. Publishers could give more attention to the value of the material as a teaching medium. It would not be necessary to rewrite original selections to make them different. Publishers could control duplication within their own series with ease, not having to fear the duplication of selections in other series. On this basis Hosic's interpretation of duplication might easily become the basis for future tabulations in which books not containing a certain percentageof duplication would be looked upon with disfavor and possibly be considered inferior. Buckingham was in favdr of using books, for a given grade, from one series when he predicted in 1924 that within a period of ten years, readers in each grade would consist of as many as four volumes purchased from one publisher. (12:112) Buying only one series of reading books for a grade would eliminate the costly duplication of materials.

Summary and Conclusions

1. Materials of reading need notnecessarily be classified as "good literature" to be desirable.

2. Tabular studies of content show the predominating influence of the imaginative type of reading material.

3. Studies have shown the practical and desirable nature of factual material.

4. In spite of influences and proofs, upholding the use of factual material, there apparently has been no great increase in its use.

5. Studies of qualities of content in readers lose their effectiveness when considered collectively because the main categories are not often identical or even remotely related. A common basis for comparison is seldom present.

6. Studies of content of readers have shown the following qualities to predominate:

   a. Poetry is a prominent form of presentation.

   b. "Animals rank high as a quality of material.

   c. "Inanimate things," "boys and girls," and "adults" rank high in individual studies.

   d. Fables, folklore, fairy tales, myths, and personification, are important types of imaginative material.

   e. Important qualities of best liked materials as determined by one study are:

1. Action, both dramatic and interesting, ranks highest.
2. The imaginative material, characterized by personification and the supernatural, was also of high frequency.
3. Interesting problems, home life, animals, and social elements of kindness and faithfulness, were comparatively frequent qualities.

7. Studies show that duplications of material are numerous when based on a comparison of the different series of reading books.

8. The latest study, made in 1932, shows a partial solution of the problem of duplication especially in the newer editions of reading books. Although the author contends that little attention need be given the problem of duplication in choosing supplementary books, the results of similar studies will be needed to confirm this viewpoint, for as late as 1929, "the need of making a systematic attack on duplication" was found to exist.

9. Although there is a psychological factor involved in the use of books containing duplicated material, no studies have attempted to discover whether this affects the degree of success in learning to read.

10. The main criticism against duplication seems to be based on the cost involved when buying new books which duplicate much of the material contained in the books still in use.

11. The attempt to eliminate all or most duplication from the numerous series of published readers would seem to be defeating the purpose of trying to get superior reading materials. In as much as any given pupil

uses only a comparatively few of the numerous readers, it seems unnecessary to try to eliminate all duplication in all readers. If each grade is supplied with basic and supplementary readers from the same publishing house it would tend to eliminate the costly and troublesome problem of duplication.

CHAPTER III

DIFFICULTY OF MATERIALS

Grade Placement

Difficulty of material depends primarily upon the characteristic features of unfamiliar words, phrases, sentences, and complex or unusual ideas or style of expression. Gates states (1925, 29:589) that difficulty of material depends on elements of (1) complex ideas, (2) character of sentence structure, (3) unfamiliarity, and (4) mechanical character of words. Dolch (1931, 20:138 & 178) analyzes the difficulty of material as depending on (1) vocabulary, (2) style, and (3) new ideas.

What combinations of the above elements increase or decrease ease in reading are not fully known. Studies have found that the traditional placing of a given selection in a given grade does not insure reading material of appropriate difficulty. Kyte (1925, 51:533-46) studied the difficulty of fifty four selections in third grade by testing pupils' comprehension with questions prepared by four elementary school principals and the city superintendent of Berkeley, California. Results showed some selections probably too easy for second grade and some too hard for fourth; 49 per cent of all of the selections were not of proper difficulty for grade three. Uhl (1924, 81:47-73) found considerable variation in the grade placement of reading materials. Nesmith evaluated a large body of primary

material by using tests of frequency of occurrence and opinions of outstanding experts and compared her findings with Uhl's comprehensive study. Of the 91 superior selections for the first three grades in Uhl's study 71.5 per cent appeared on Nesmith's list as being repeated most frequently in present practice. An 83.5 per cent agreement in grade placement was found between the two studies. Of the 30 most undesirable selections in Uhl's study only 16.5 per cent appear on Nesmith's list. As a result of these favorable comparisons between frequency count and expert judgment and pupil's and teacher's evaluations Nesmith concluded, (1927,59:83)

> These findings suggest that selections occurring most frequently in present practice are, in the main, in accord with the choices of teachers and pupils.

The above statement may lead to a degree of satisfaction with the average grade placement of material to such an extent that further progress may be materially affected unless consideration is given to the fact that Nesmith only used 632 stories and poems out of a possible 5,841 titles. The 632 stories and poems used in the study were those appearing two or more times in all courses of study and materials of reading examined. This select and frequently used group of material shows only an approximate 80 per cent agreement with grade placement experimentally determined as desirable. The per cent of correct grade placement of the entire contents of a primary book would doubtless drop considerably below the 80 per cent mark. Perhaps correct grade placement might go as low as the 60 per cent which Kyte found to be true in his limited study of random selections. It is desirable that careful consideration be given to some type of scientific

determination of the proper grade placement of all materials not so placed at this time.

Vocabulary Burden

An examination of the elements controlling difficulty of materials shows words to assume a basic position. With a small number of words sentence construction is limited and in turn limits the presentation of more elaborate ideas. In addition the nature of the word itself has a great deal to do with the way in which it functions in the child's reading. The important position of the word in determining difficulty of material has led to numerous studies concerning the vocabulary of primary readers.

Packer found, (1921, 61:127) in a study of ten first grade readers, a wide range of vocabularies and a relatively low frequency of occurrence for at least five sevenths of the total number of words. Of a total of 3,541 different words 2,048 occur four times or less and 2,562 occur less than ten times.

Selke and Selke (1922, 67) found a total of 1,636 different words in a study of twelve beginning books. Different words ranged from 157 in one book to 630 in another book. The percentage of common vocabulary was extremely small. Practically one half or 738 words of the total number were found in only one book while only 38 words were common to all twelve readers. The books could hardly be considered supplementary because of the extensive vocabulary in any two books. The per cent of words occurring less than ten times ranged from 70 per cent in four books to less than 50 per cent in one book, the average being about 58 per cent.

Housch (1918, 44) found in ten second readers that different words ranged from 1,198 in one book to 1910 in another. The range in the number of words introduced in the various books was not nearly as great as that found by Selke. There were only 419 words common to all readers and hundreds of words occurred only once or twice.

Power (1927, 64:51) found in a vocabulary count of ten primers and nine first readers 2,428 different words of which 20 per cent were used only once and 40 per cent occurred less than five times in all books. He estimated that the pupils were presented with approximately 2,000 different words in first grade from an average of fourteen readers, and that practically one half of these words were seen five times or less in all books.

Irwina, in a very comprehensive study of the vocabularies in thirty three primary reading books, found the usual wide range in the use of vocabularies. The following table shows some of the extreme conditions of vocabulary use found in her study (1929, 47:20-21).

Table W *

Frequency of Running Words and Different Words (Word Meaning)

Found in Various Primary Reading Books

*Rearranged from Irwina's Data.

	Books	Different Words	Running Words
Primers	1	383	4052
	2	316	6185
	4	274	5002
	7	488	5968
	11	290	4172
First Reader	1	698	7675
	3	601	10900
	4	249	9696
	8	952	6064
Second Reader	1	1111	12916
	2	1326	31797
	6	1314	11450
	10	662	10899

This table shows the relationship between the number of different words and running words found in any given book. It was arranged to show the extreme cases found in Irwin's study. In one primer 274 words are presented to the pupil while in another 488 words are presented with little increase in the number of running words. In one first reader 249 different words are found in 9,696 running words while in another 952 different words are presented in 6,064 running words. Those wide ranged in the relationship between different words and running words indicate to what extent variations in frequency of word occurrence may be expected. The following table shows the per cent of repetition in a few of the books studied, (1929,47:24).

Table VI*

Per Cent of Frequency of (the use of) Words in

Five Series of Readers

Frequency	Primer			First Reader			Second Reader		
	1-4	4-9	10	1-4	5-9	10	1-4	5-9	10
Series A	59.7	17.2	23.1	65.7	15.3	19.0	47		
B	23.0	24.3	52.7	41.5	20.1	38.4	47.8	17.7	34.5
C	47.0	26.4	26.4	67.9	21.5	10.6	73.2	13.0	13.8
D				10.8	18.9	70.3	46.1	22.5	31.4
E	27.0	25.0	48.0	45.6	17.3	37.1	46.7	16.5	36.8
(1) Average	42.86	21.09	35.99	50.12	18.45	31.41	56.85	17.27	25.88

(1) All Books Included in Irwin's Study, Twelve Series
*Rearranged from Irwin's Data to Show Comparisons of High and Low Percentages.

From this table we see that the group of words which occur four times or less constitute a little less than one half of the different words used in the primers and slightly more than one half in the first and second

readers. A condition that is decidedly antagonistic to the mastery of new words is shown by this lack of repetition. Irwina comments on this lack of sufficient repetition of words as "... an appalling fact." (1929,47:26)

> While there is no decided answer we can give as to how often a word should be repeated in the primary readers, it is at least reasonable to expect that not more than 25 per cent of the words should occur less than four times.

Only two books in the study came up to this arbitrary standard.

Gates found, through an analysis of twenty one courses of study in beginning reading, the same wide variations in the use of vocabularies as was found in other studies. The evidence indicated the lack of information concerning the optimum number of different words which a first grade pupil should be expected to learn. There was also no agreement as to the amount of repetition required for mastery. The following table shows the wide range found in the number of different words presented in the various books (1925, 29:587).

Table VII

Number of Different Words in Pre-Primer and Other First Year Material Combined

Number of Different Words	99 or less	100 149	150 199	200 249	250 299	300 349	350 400	900
Number of Systems	1	1	2	4	2	1	4	1

This study attempted to find out on what basis the vocabulary of the various systems had been chosen. In order to do this Gates set up a series of possible criteria for the selection of words for first-grade materials. They are (29:588):

1a* Kind and number of words needed to tell stories.

1. Utility for:
   a. furthering some type of word mastery,
   b. establishing familiarity with words most frequently found in general reading matter,
   c. meeting demands of attractive books for children about seven years of age,
   d. immediate practical needs as in reading signs, posters, labels, etc.
2. Interest of children in the idea, things, or events represented by the words.
3. Ease of learning and later recognition.

The results of this particular analysis were not entirely satisfactory as the principle of selection actually used had to be surmised in most cases. Some systems showed the predominance of the story content where the kind and number of words were selected without any further consideration of other criteria. Five systems contained words satisfying the criteria of some type of word mastery. As many of the words were introduced to complete phonetic families and provide drill on phonograms they failed to satisfy other criteria. Two primers compared words with Thorndike's word list and

*Not listed by Gates in his selection of possible acceptable criteria. Mentioned as a criteria used, apparently not especially worthy, and easily overemphasized.

roughly indicated the correlation. Only a few of the criteria listed by Gates could be detected as providing a basis for the choice of vocabulary. Although the character of the criteria used as a basis for the selection of words for the first year are important there evidently is no common ground of agreement among the authors of first-grade textbooks, as far as this study indicates.

Rankin made a study of three primers in which she found (1927,65:284)

> There is no indication of agreement among the authors of the three primers as to the size of vocabulary that should be employed in writing for beginners in reading.

In addition there was lack of agreement in the amount of drill provided, in the manipulation of the vocabulary in relation to regular and intermittent drill, and in the rate of introduction of new words. An interesting and highly informative conclusion was that there was no improvement of vocabulary manipulation in primers published in 1914 and 1925, respectively, over the primer published in 1907.

This study differs from other vocabulary studies in that an attempt was made to obtain possible indications of progress in making books. An examination of the data pertaining to frequency and rate of introduction of words is interesting because of this feature (1927, 65:280).

Table VIII

Number of Running Words, Different Word Forms,

and Different Word Stems

	Aldine Primer (Published 1907)	Elson Primer (Published 1914)	Pathway to Reading Primer (Published 1925)
Running Words	7,192	6,857	5,515
Different Word Forms	388	555	435
Different Word Stems	186	321	277
Estimated Different Words per Page*	2.13	4.59	3.51

*Added to Table from Rankin's Discussion. Date of Publication Added.

Table IX

Percentage of New Words Introduced in

Each Third of Each Book

	Aldine Primer (Published 1907)	Elson Primer (Published 1925)	Pathway to Reading Primer (Published 1925)
First Third	42	57	49
Middle Third	33	28	28
Last Third	25	15	23

Of interest also is the author's purpose in the respective books. The Aldine primer contains a vocabulary intentionally small so that every word can be repeated frequently but naturally as new and varied subject matter demands. The Elson primer rests its claim for excellence on the

motive of genuine interest in content, provision for vocabulary drill being made in review lessons systematically introduced. The Pathway primer makes no statement concerning either the motive of interest or the manipulation of vocabulary. This very limited study offers no basis for a general conclusion that primers are not progressing in their solution of the vocabulary problem, but it certainly is true that of the three primers appearing in the study the latest published primer apparently shows the least concern for the results of research concerning vocabulary burden and interest factors. It is also evident that the primer published before the large amount of research on vocabulary burden appeared, recognized this important phase of difficulty of materials.

In Irwina's study no attempt was made to discover any trends in vocabulary treatment although the series of readers studied covered a wide period of publication. However, interesting comparisons showing the same lack of development as discovered by Rankin may be made from the data. One instance follows (1929, 47:17 & 24)

Table X*

Comparison of Per Cent of Frequency of Words in One Reader and General Average of Twelve Series

	Frequency Groups					
	First Reader			Second Reader		
	1-4	5-9	10	1-4	5-9	10
Columbus Readers Published 1897..	10.8	18.9	70.3	46.1	22.5	31.4
Average Published from 1897 to 1928	50.12	18.45	31.41	56.85	17.27	25.88

*Arranged from Irwina's Data.

Although it is unwise to draw conclusions from such limited data these cases show an utter lack of development in attempting to solve the problem of the proper repetition of words. However, all of the studies summarized show a common disregard for repeating words a sufficient number of times. The studies also show lack of agreement concerning the optimum number and kinds of words to be used. It therefore seems probable that a great deal more care should be taken in the selection and arrangement of the vocabularies in primary readers.

Phrase Burden

Closely related to vocabulary burden is the problem of phrase burden. It seems logical that if vocabularies of readers vary greatly in size, range, and per cent of repetition, that phrases would be found to do likewise. Escher made a study of phrases in twenty two primers and first readers and found the following facts (1928, 25:12-15)

Table XI*

Frequency of Phrases Occurring in Twenty Two Primers and First Readers

	Frequency
Total number of phrases selected	23,497
Different phrases	7,011
Phrases occurring only once	4,098
Phrases occurring only twice	1,086
Phrases occurring less than three times	5,184
Phrases occurring more than five times	950
Phrases occurring more than twenty five times	142

*Arranged from Escher's Data.

This study shows the same general undesirable condition in phrase selection and arrangement as was found in the study of vocabulary selection and arrangement. Mastery of words and phrases are closely allied in a properly developing reading ability. Escher concludes from the fact that there are only 142 phrases recurring twenty five or more times that (25:55) "there are very few phrases whose recurrence will justify the drill for automatic control." The author found that the series of readers ranking the highest in percentage of frequency of phrases was the easiest to teach of all the readers examined in the investigation.

Frequency Tables, Measure of Difficulty

The vocabulary studies have included the making of tables which would prove useful as an aid in choosing supplementary material. The use of such vocabulary tables is similar to the use of duplication tables discussed in Chapter II. They are limited in the same way to only the small number of books and editions included in any study and soon cease to be useful because of a growing list of new and revised editions.

Housch (1918, 44) made such a study of ten second readers for the purpose of aiding in the choice of supplementary readers to go with basic texts. The tables showing a comparison of vocabularies contained in method and content readers show the number of common words in any two books to be relatively small. Miller (1916, 56) made a study of the vocabularies of third grade readers and suggested the choice of content of supplementary readers should depend upon the highest per cent of words common to the method or basic reader. While this may have been a new thought in connection

with vocabulary studies in 1916 it is now the basic reason for making tabular studies of vocabulary occurrence. The following sample table is one of several made by Beck in a study of the vocabulary of first grade readers (1929, 3:227).

Table XII

The Per Cent of Words in Common

*	Wag and Puff A	Child Story B	Good Reading C	Lincoln D	Playtime E	Rainbow Fairies F	New Primer G	Up and Doing H
A		38.9	60.1	52.1	35.3	16.7	37.8	39.2
B	53.3		64.2	57.4	40.8	21.0	42.0	45.4
C	38.4	30.1		40.0	28.6	14.9	29.7	32.9
D	50.9	40.8	61.2		38.6	18.4	41.3	39.8
E	55.0	46.4	69.6	61.4		25.7	48.9	49.6
F	54.5	50.0	76.1	61.2	53.7		53.7	55.9
G	54.4	44.2	61.7	60.7	45.2	23.4		49.8
H	39.9	33.6	52.4	41.5	32.4	17.5	35.2	

*Letter substituted for name of reader. Name corresponding to letter may be found at top of table.

This table shows a wide range in the common word content in the eight books. The table to be read down from the top shows a rather consistent tendency for each of the eight readers. Good Reading appears to be the reader which would be easiest to supplement and the Rainbow Fairies the hardest. In fact other books in the study could not serve as supplementary readers to the Rainbow Fairies reader if we assume that the common vocabulary should be more than 25 per cent. In the Child Story reader column Rainbow Fairies appears as the best supplementary reader as 50 per cent of its words are common to the Story reader. The F column followed horizontally shows that the Rainbow Fairies reader is the best supplementary reader

as 50 per cent of its words are common to the Story reader. The F column followed horizontally shows that the Rainbow Fairies reader is the best supplementary reader of the group, containing the highest common vocabulary in five books, and nearly the highest in two books.

The serious vocabulary difficulties encountered when changing from one book to another have offered incentives for vocabulary counts so that supplementary readers containing the highest percentage of words common to the basic reader may be chosen. This offers only a partial solution to the problem because studies have found such a small percentage of words that are repeated five times or more in any one book that by the time this differed repetition is encountered in a second book it would haveceased to function as an aid to mastery. Review of words for a period after actual mastery of the word takes place is useful or even essential but unless such review is preceded by a sufficient number of repetitions to insure mastery it is not likely to produce the desirable results. Irwina's comment on this point is (1929, 47:30):

> It would seem that the more desirable procedure would be to have a word occur with a high frequency in the book in which it is introduced and that the repetition in the succeeding books should be chiefly for the sake of drill, and hence the frequency of recurrence could be less in the second book than in the first.

Table XIII*

Words Appearing Once

Primers	Number of Words Appearing Once	Per Cent Appearing Once
Wag and Puff	73	16.7
Child Study	54	16.9
Good Reading	195	28.7
Lincoln	80	17.9
Playtime	20	7.1
Rainbow Fairies	15	11.2
The New Primer	29	9.6

*1929, 3:226

The use of a common-word table takes all guessing out of the choosing of supplementary readers on the basis of a common vocabulary. If the basic reader has a sufficient number of repetitions of words that are to be mastered the common-word table is of considerable value. If the basic reader contains a large number of individual words with few repetitions the table is of less value. This point is illustrated in the above two tables taken from the study of Beck. In Table XII the Good Reading reader appears in a favorable position because it can be easily supplemented. In Table XIII the Good Reading reader appears in a less favorable light because it has the greatest number and the second highest percentage of words appearing only once. A comparison of the number and percentage of words appearing once indicates that the Good Reading reader probably has the largest and most extensive vocabulary of any book appearing in the study. This probably is the reason why the other books contain such a large per cent of common

words. If meaningful repetition rather than special drills and exercises is a more efficient way of mastering words, any supplementary reader, no matter how large its common-word vocabulary may be, will not provide sufficient repetition to correct the lack of word mastery in the basic reader. A delayed review of a large number of half-learned words is apt to prove a wasteful method.

It is evident then that the most desirable evaluation of reading materials must make use of both the frequency and common-word tables. First, the vocabulary count of a basic or method text must show a desirable number of repetitions of the words to be mastered. Secondly, the vocabulary count of supplementary books should show a comparatively high per cent of words in common with the basic text, and thirdly, the vocabulary count of supplementary readers should show a satisfactory per cent of repetition for the additional new words that are introduced. The number of tables available for comparing the count of recurring and common words is limited. It is likely that only a very small per cent of available text books have been included in such studies. In most cases such vocabulary counts have to be made by the parties who are interested in evaluating textbooks on a vocabulary basis before adopting a particular book for use. The demands of time and money usually do not allow such studies. The result is that the vocabulary problem is only slowly yielding to the efforts and proofs of research. Beck contends, however, (1929, 3:224) that the vocabulary problem has apparently been solved by certain school systems through the selection of a given series of readers throughout the grades.

This possible solution of the vocabulary problem seems a logical

one. Studies show conclusively that there is very little agreement among authors as to the number, kind, or frequency with which words are used. It seems logical then that a great deal of difficulty would be experienced in finding supplementary class material containing a vocabulary treatment that is in accord with the treatment in the basic text. If choosing books from different series offers obstacles that are apparently preventing the solution of the vocabulary problem, some other method of choice should be followed. The only other method that would avoid the costly series to series comparison would be the buying of all textbooks from one series. Such a limitation on the selection of reading textbooks would speed up the solution of the vocabulary problem.

Form of Presentation in Relation to Difficulty

Difficulty of material not only depends on the size and nature of the vocabulary and the number and kind of phrases but also upon how combinations of words and phrases are put together in meaningful ways. The author of well-written material takes cognisance of these facts and attempts to determine experimentally whether any unnecessary difficulties, inherent in the material itself, stand in the way of a pupil's success. Smith, (1920, 70:83) in the construction of first grade reading material, found it necessary to have three teachers do special work on the improvement of diction in order to remove unnecessary difficulties. It was found that many changes, apparently unnecessary according to adult standards, were necessary in order to eliminate all expressions unnatural to children. All such changes were grammatically correct. Following is an example of such a

change. The sentence, "Up to the tree the little bird flew," gave considerable trouble until it was changed to, "The little bird flew up to the tree," when it was learned with ease.

Fishback studied the effect of different types of discourse on comprehension ability by taking a passage, Silkworms and Silk, judged to be well written English, and modifying it by substituting synonyms, changing short sentences into long ones, and changing the position of two paragraphs. More than 200 fourth and fifth grade pupils were divided into two equal groups by the use of Monroe Standardized Reading Tests. One group read the original passage and the other group the modified form. A test of comprehension with fifty four true false statements showed higher scores for the pupils reading the well-written passage. While this study was conducted with pupils of the lower intermediate grades it is possible that similar results would be obtained in the primary grades.

Much discussion has centered around the question of factual or imaginative presentation. The summarization of research in Chapter II showed the predominance of imaginative material and emphasized the prevailing sentiment that much more factual material was needed. Uhl's study was one which definitely showed that factual material could be used with success. In addition to the social justification for the inclusion of factual material concern was given to the possible psychological effect produced on children by using too much imaginative material. That factual material is desirable and possibly quite necessary is shown by several studies.

Garnett found in an experiment with factual and story-factual material

that results seemed to indicate neither type of material was more efficacious. The study was not conclusive in any way as it only involved two passages and eighty four cases, but it lends support to the necessity for the inclusion of factual material (1926, 28). Certain pupils in grades three to six, inclusive, were equated and paired through the use of the Stanford Intelligence Test and divided into two groups. Two stories were rewritten into factual form. Each group was presented with one story and a factual reproduction of the other story. One group read the story passage one day and the factual passage the next while the process was reversed in the second group. The reading was immediately followed by a test of twenty questions. While neither type showed an easier path to comprehension it was significant that there was only a slight preference expressed by the pupils for the story material, the frequency being 46 for story material and 34 for factual. Of some note also is the fact that the story material took longer. Although no conclusion can be drawn from the study the implication might be made that where material is to be read for the assimilation of facts the factual form of presentation is probably more desirable. It was preferred by nearly one half of the students and showed a saving of time over the story form.

Adding the results of a more comprehensive study involving the factual and story form of presentation the implications from the above study are strengthened. McKee (1926, 55) took two story-form passages from a well known reference book and produced two fact-form passages as nearly like the original as possible. These were presented to each of two groups of 304 pupils in grades four to eight. The pupils were approximately paired

through the use of the Thorndike McCall Reading Scale. Each group read a story form of one passage and the fact form of the other passage. One group read the story form first and the other group read the fact form first. An objective test of fifty questions was given to test comprehension. It is of interest to note that the original story form consisted of two and one half mimeographed pages while the rewritten factual form consisted of only one page. In terms of comprehension the results showed the superiority of the factual form of presentation.

The educational implications of the study are discussed by McKee and may be summarized briefly as follows: (1) The story form, which may be said to represent literary material, when used in work-type reading may handicap the proper development of appreciation for literature. (2) The story form may not easily lend itself to those drill exercises which are necessary for the development of abilities involved in the location, evaluation, selection, and organization of materials.

While this experiment was outside the field of primary reading there is no wide separation between the third and fourth grade and what might be true in fourth grade could easily prove to be true in third grade. Author's of primary reading materials havemade special efforts to eliminate some of the fanciful material and substitute factual material. This has not been done solely as a result of research but rather through a philosophical consideration of educational needs. There is need for considerable research in primary reading concerning the merits of story and factual forms of presentation. Until such research appears it is wiser to accept what crumbs of evidence may be offered. McKee's study shows there is

greater possibility for comprehension in the intermediate grades inusing the factual form of presentation for informational material. Other studies will be needed to confirm this viewpoint.

Poetry is a very popular form of presentation in the primary grades. Dunn (1921, 23:11) found 51 per cent of material in twenty nine primary books in verse form. Nesmith (1927, 59:83) found 49 per cent of the selections appearing two or more times in a variety of material to be poetry. One may wonder upon what basis the use of such a high percentage of poetry has been justified in primary materials. The following quotation contains perhaps the most comprehensive statement, from the adult point of view, to be found in defense of poetry in primary reading, (1927, 41:261).

> "The main purpose in the word of appreciationis to increase enjoyment."[1] As children enjoy the music of rimes and the nonsense of jingles, poetry has rightfully come to form a considerable part of primary reading matter. Not only does poetry give pleasure to children but "rhymic motion or the flow of measured and beautiful sounds harmonizes their differences, tunes them up to their tasks, disciplines their conduct, comforts their hurts, quiets their nerves." At the same time, from a literary point of view, "it cultivates their ear, improves their tastes, provides genuinely artistic pleasure, supplies charming images and adds many pleasing and useful words to the growing vocabulary."[2]

As these are essentially adult standards of why poetry should be enjoyed by children they would have to be accepted with a great deal of reservation. Research studies abound in statements to the effect that adult

1. Quoted by Harris from Anderson and Anderson. Reading Objectives. Laurel Book Company.
2. Quoted by Harris from MacClintock, P.L. Literature in Elementary School, The University of Chicago Press.

opinions as to what children enjoy do not agree with the children's own expressions as to what they enjoy. Huber (1926, 45:260) found in a study of children's poetry that elements of greatest consequence to the child are overlooked by adults.

The predominating characteristics of enjoyed rhymic motion and aesthetic enjoyment and development of appreciation which are advanced as prime reasons for the inclusion of poetry involve two assumptions that have not proved to be wholly correct. In the first place studies have shown that verse form is not especially attractive to children. Dunn (1921, 23:47-49) found that a generous interpretation of the statistical results of her study showed verse form to be indifferent in value. She states,

> If verse form counts neither for nor against interest, children's enjoyment of poetry will depend upon its other qualities. If the verse of the early readers is selected for its richness in true factors of interest it will be enjoyed and a developing taste for poetry may be expected. (23:47)

Huber, in a very comprehensive study involving 50,000 children and 100 poems in each grade, found no reason to include verse form as an outstanding element in the enjoyment of poetry. As in Dunn's study interest factors such as action and plot determine whether or not a poem is enjoyed.

In the second place the discussion in Chapter II brought out the point that certain authors contend that trends in contents of primary readers should be away from the purely literary and appreciative. These are qualities whose effects are most difficult to trace and which are almost certain to produce material too subtle and mature for teaching reading.

Poetry is liked by pupils. Dunn found this to be so and Uhl

(1924, 80:109) found that the popular notion about dislike of poetry as evidenced by the pupils themselves is based upon dislike of certain poems or of poems which are not well taught and not upon a general dislike of all poetry. Poems not properly located in the correct grade would naturally give a great deal of difficulty. Huber (1926, 45:289) found that grade location of poems according to expert judgment and traditional placement was only 39 per cent right as compared with children's choices. Incorrectly graded poetry perhaps accounts for the greater part of the pupil's dislike for poetry.

The assumption that "poetry has rightfully come to form a considerable part of primary reading matter," because "children enjoy the music of rimes and the nonsense of jingles," is unwarranted. It is doubtful whether approximately 50 per cent of primary material should be poetry. As a form of presentation poetry seems to be justified only on the basis of elements of interest and utility in common with prose selections.

Vocabulary Standards in Relation to Difficulty

Studies previously summarized call attention to the lack of conformity pertaining to the number of words, kind of words, and manipulation of words used in textbooks. Very little specific research evidence has been presented to establish standards that could serve as a general guide in primary vocabulary use. One of the first significant contributions to the problem of correct vocabulary use was the publication of word lists. Jones published (1915, 48) a "Standard Vocabulary" for primary grades that was widely used until the publication of the much more comprehensive word

list of Thorndike's. (1931, 76) Gates' list of 1,500 words for primary grades, supplements Thorndike's first ten thousand words and is an authoritative source for the vocabulary of primary grades. Words from the Gates list are intended to satisfy the following criteria: (1926, 30:639) (1) adult usage; (2) children's usage of several types; (3) children's interests; (4) ease of learning to read; (5) familiarity in children's speech; and (6) frequency in attractive children's literature. It was intended to function in the writing of new material, in subjects other than reading, in writing and spelling, and in the construction of test materials. Any vocabulary list, to be of the greatest value in assisting in the mastery of words, should function in the same multiple way.

Dolch (1928, 21) made a combined word study of fifteen other studies which was to be used as a basis for the formulation of vocabularies of each grade from the first to the eighth grade inclusive. It is interesting to note that both Gates and Dolch thought it essential to include a consideration of frequency of words in adult usage. A striking fact brought out by the study was the relatively small number of words common to all lists. There were 4,141 words which appeared only once in the fifteen studies used as source material. This is in accord with the wide range and variety found in the studies summarized previously in this chapter.

Wheeler and Howell made a study of ten primers and ten first readers in order to check Gates' list of words. Their study was undertaken because of the four sources of the Gates' list only two were primary reading sources and in addition Gates used as source material vocabulary counts of readers largely out of date as well as unpublished studies of unstated

numbers of words. The Wheeler list showed wide discrepancies in ranking between certain words also found in Gates' list. Wheeler's findings do not invalidate Gates' list but rather supplement it.

These findings should serve as a warning that no one vocabulary list is apt to prove adequate as a final or absolute standard of vocabulary choice. It is doubtful that it would be desirable to have any one list or combined lists serve as a final authority. Local, social, cultural, and industrial conditions vary greatly in the various parts of the country and so it seems likely that variations from a standard list of words would be found desirable.

Uhl lists six possible ways of selecting vocabularies for courses in reading (1924, 81:14-17)

> First, subject matter can be selected for its content value and with little reference to its vocabulary. ---- Second, the reading vocabulary can be selected so as to have words of apparently increasing difficulty. ---- Third, reading courses can be planned so as to contain words which exemplify drills upon phonetics. ---- Fourth, words can be carefully selected as to difficulty but at the same time dependent upon the character of the subject matter to be read. ---- Fifth, words can be selected with reference to the child's reading needs. ---- Sixth, the vocabulary can be selected with reference both to the difficulty of words and the child's reading needs.

The first three bases for the selection of vocabulary have proved to be inadequate. The sixth way, a combination of the fourth and fifth, "has the advantage of giving a vital motive to reading and at the same time building up a vocabulary which is closely related to children's needs." A comparison with Gates' criteria for the selection of words shows a complete general agreement with the method advocated by Uhl as most desirable. The utility,

interest, and ease-of-learning motives predominate in both lists of criteria.

Vocabulary counts, resulting in word lists, help to determine the vocabulary needs of pupils. In addition to meeting the needs of children's vocabulary Gates claimed for his list the advantage of ease of learning to read. It is not clear on what basis Gates was enabled to include this advantage with others more particularly related to various vocabulary counts. Wiley found in a study of "Difficult Words and the Beginner," that as far as the limited number of words involved in his study were concerned, frequency of occurrence in the Gates' list seemed to indicate difficulty of learning. The same conclusion was reached with respect to Thorndike's list. The author states (1928, 85:281)

> It would seem, therefore, that as far as this list of sixty words is concerned, Gates' list improves but little upon Thorndike's list. Evidently, the criteria used by Gates do not get at the root of the difficulty which children experience in learning the words.

Thorndike's list makes no attempt to correlate frequency with ease of learning. That Gates' list is essentially one composed of words easy to learn in addition to other vocabulary criteria, apparently needs to be accepted with reservations. Wiley concluded (1928, 85:285),

> From this study it would be safe to conclude that the meaning which a word has for a first-grade child is a factor which will greatly influence the difficulty he may have in learning to recognize the word symbol. This being true, more attention should be given to this factor in selecting vocabularies for first-grade children .... Inclusion of a word in the spoken vocabulary of children, in children's literature, or in any of the present word lists does not

seem to be an adequate measure of the learning difficulty of the word.

It is doubtful whether the inclusion of a word in any vocabulary list would be accepted as an index of its learning difficulty. On the other hand perhaps such assumptions are too often made. It would be a short cut to the solution of the vocabulary problem if a correlation between frequency of appearance of words in reading materials and ease of learning could be found. The desirable recurrence of words in material in immediate use as an aid to mastery is not to be confused with the frequency of words found in a wide range of materials used as the basis for word lists.

An attempt to evaluate vocabularies on the basis of the experiential background of the pupils is a desirable procedure. Efficient educational methods proceed from the known to the unknown. Vocabulary lists are an attempt to find words which are symbols of pupils' experiences, as well as symbols of anticipated experiences. Even though the word is a symbol of a common experience, the meaning which each child may be able to attach to the word is based on past experience and likely to be entirely individual. Lack of a common experiential background influences the difficulty with which new words are learned and places the burden of acquiring meanings upon the method employed to teach such meanings.

The repetition of words in reading materials has been a problem that has caused much concern. While there is some agreement as to what words should be included in reading materials there seems to be no common ground of understanding as to what is a most desirable goal with respect to frequency of repetition. The Twenty-Fourth Yearbook of the National Society

for the Study of Education states (1925, 16:170)

> Until experimental conclusions indicate otherwise, it is much safer to present interesting and vital experiences or information in a simple way, keeping well within the vocabulary which a child uses and leaving the matter of the repetition of words to the requirements of good writing.

Uhl and Gates maintain that this is not a desirable method. Wheeler maintains (1930, 84:60) that persons and committees evaluating vocabularies of primary readers make a serious mistake by not determining the frequency of word recurrence. It is not enough to be satisfied only with computing the percentage of the entire vocabulary that occurs within a given list. Words to become a part of the child's permanent vocabulary must be repeated a sufficient number of times. This is a reiteration of what all other studies summarized earlier in this chapter have concluded. The preponderance of evidence is on the side of more frequent repetitions of a higher percentage of words in a variety of meaningful settings.

Wheeler offers what he calls a "Logical Method of Evaluating Vocabularies" in order to determine how well a given book prepares for the reading of other primary books. One of the main points in this method is to drop out of consideration all words which occur less than ten times.

Irwina maintains (page 31) that it is reasonable to expect that 75 per cent of the words should occur more than four times. Irwina summarized a study by Kaufman who said, "The basis of determining this (when to master words) is the number of times the word occurs in that and subsequent books." Patterson states that contacts, both numerous and varied, with meaningful written and printed symbols, is one of four particularly important things

in the provision of suitable reading activities in beginning reading. Dolch maintains (1931, 20:61) that repetition is necessary in building up word recognition; that repetitions in different settings are more beneficial and that repetitions should be distributed so as to recur from week to week and month to month. "In view of this fact, the great number of words used once only in early school readers is almost sheer waste of effort."

Gates in his book entitled Interest and Ability in Reading gives the most comprehensive presentation of the need and proper treatment of repetition of words (1930, 31:34-39). He carries his case to a conclusion with definite recommendations as to the proper amount of repetition. With the exception of Wheeler few other studies have offered definite figures as to what might be considered a reasonable standard for judging the proper recurrence of words. Gates offers figures as a result of experimental evidence that are based on estimated guesses as to what the number of repetitions should be for pupils of various intellectual levels in first grade. According to his table superior pupils should be provided with a minimum of twenty repetitions per word aside from all incidental reading outside of regular class work. The number of repetitions increases to fifty five with exceedingly dull pupils. The frequencies recommended by Gates apply not only to the recurrence of words in textbooks but to the total recurrence that should take place in all materials including work books, recreatory reading, and various testing materials used in the classroom. If the recurrence of words which must necessarily occur in class material supplementary to textbooks, is added to Wheeler's minimum frequency of ten repetitions found in textbooks, it might be safe to assume that his

minimum recommendation could be easily increased to twenty repetitions.

The problem of how many words are to be presented in each primary grade is closely associated with word recurrence. The presentation of a large number of words necessarily limits the possibilities for repetition. The surprisingly large vocabularies in the readers in the primary grades has resulted in a development of a so-called basic vocabulary. A minimum list of words which are to be mastered is chosen. Wide discrepancies in the size of reported mastery vocabularies may be noted. Lane reports (1919, 53) the adoption by Los Angeles teachers of a minimum vocabulary list of 807 words for pupils beginning second grade. This study was based on the Elson primer and first reader. Brown (1923, 10) reported the publishing of a mastery vocabulary, based on Winston readers, which consisted of 680 words for the first three grades. In one case a minimum of 807 words in first grade alone, and in the other 680 words in three grades are to be mastered as a minimum vocabulary. It would seem that the Brown mastery vocabulary list was entirely too small.

Power made a study to "determine the ability of first grade children to recognize at sight the words of a minimum word list." He used a minimum word list of 100 words based on teacher choice and scientific vocabulary studies. The pupils in the experiment were presented with approximately 2,000 different words half of which they saw five times or less in an average of fourteen different readers during their regular reading period. The date showed that after a month of instruction with a minimum word list, thepupils averaged better than they did after they had been instructed without a minimum word list (1927, 64,137). This study

would tend to indicate that although the Brown minimum list of words for primary grades seems too small because of the large vocabulary counts found in primary books, it can still serve as a very satisfactory basis for word mastery. An inadequate list is better than no list.

Harris in commenting on a standard minimum vocabulary says, (1927, 41:253) "The exact number of words needed for a first-grade child's vocabulary has not been definitely agreed upon." Studies analysed range from 250 words for grade one to 1,000 words for the primary period. The Twenty-Fourth Yearbook of the National Society for the Study of Education by combining the vocabulary studies of Horn, Mrs. Horn, and Packer, contends that the spoken vocabulary of a six year old child should include 1,000 words approximately. Irwina as a result of her study previously mentioned estimated as desirable 800 words for the first year and 700 additional words for the second. No recommendation was made for the third grade.

Gregory made a study of theminimum vocabulary requirements in the primary grades of the Oregon state course of study. The table on the following page shows the extent of the vocabularies in the various readers. Disregarding the introduction of new words in such subjects as history, Geography, and science, Gregory found a total of 5,190 different words introduced by the end of the third grade. He conservatively estimates that 6,000 words would be a minimum number introduced by the end of the primary period. Approximately 35 per cent of the words appeared but once and about two-sevenths of the spelling vocabulary was not presented in the regular reading vocabulary. Gregory concluded that the lack of frequency

of repetition may be an important cause of poor reading and failure to recognise the same words again in the upper grades.

Table XIV*

Number of Words in Textbooks Prescribed by the Oregon State Course of Study

	Number of Different Words	Number of New Words
Beacon primer	743	743
National reader	503	238
Beacon first reader	804	395
National first reader	849	265
National second reader	1,770	861
National third reader	3,304	1,888
Hamilton's arithmetic	1,282	529
New World speller:		
Reading	450	58
Spelling	1,453	213

*1923, 28:129 Rearranged from Gregory's Table.

There were no other studies discovered which could be compared with Gregory's. Just how the reading vocabulary of 5,190 words compares with other course requirements can not be shown. Some indication is given, however, from the fact taken from Power's study that first grade pupils were presented with 2,000 different words in the various readers used, that Gregory's study might indicate a normal condition of the ordinary reading course.

The relationship between such studies as Gregory's and other vocabulary counts which show a large number of words introduced during various stages of the primary period, and the establishment of a mastery vocabulary

list is very easily misunderstood. The supposition that mastery vocabulary lists should be large because the total number of different words introduced in reading materials is large, is not without its dangers. Studies repeatedly suggest or arrive at the conclusion that lack of sufficient repetition or the introduction of too many new words results in reading failures. If a mastery vocabulary is made up of words that are repeated a sufficient number of times during a given course to insure their complete assimilation it may seem to be a list that is entirely too small when compared with the total number of words introduced. The act of adding more words to the mastery list while neglecting to provide opportunity for meaningful experience with such words, produces a longer list to be sure, but detracts from the real purpose and value of such a list.

Gray, finding justification in the results of Gregory's study, criticizes the smallness of Brown's mastery vocabulary list. There is no basis for concluding that because Gregory found 5,190 words introduced in one course of study that another course would not benefit greatly by using a mastery vocabulary list of 680 words for the primary period. Subtracting 35 per cent of the words because they were used only once leaves 3,374 words. A large percentage of this number would be dropped when words recurring only two or three times were omitted as being poor material for a mastery list. After the words introduced in the arithmetic were subtracted in order to produce a condition more comparable with Brown's list, the 5,190 original words would have dwindled to a much smaller number. Much more could be added to the discussion of this comparison, and while Brown's list is open to criticism especially on factors other than its size, the point

to be made is that the size of mastery lists is relatively of little importance in comparison with factors related to pupil-word experiences.

Summary and Conclusions

1. Difficulty of material depends primarily upon the elements of unfamiliar words, phrases, sentences, and complex or unusual ideas or style of expression.

2. The traditional grade placement of reading materials, or an evaluation by adult experts, does not insure that they will be of appropriate difficulty.

3. Vocabulary burden seems to assume a basic position with respect to difficulty of material.

4. Vocabulary studies found:

   a. A wide range in the number of words used in the various reading books, indicating no general agreement as to what the approximate number of words introduced in the various grades should be.

   b. A general lack of sufficient repetition of words producing a situation which is decidedly antagonistic to mastery.

   c. A very smallvocabulary common to readers in a given grade makes the choosing of appropriate supplementary readers most difficult.

   d. A limited amount of data indicates that in some instances no decided improvement has been accomplished in the making of textbooks with respect to a common understanding as to what should be the approximate number of new words

introduced in each grade, or the amount and kind of repetition of words provided.

5. The making of vocabulary tables, to determine the common vocabulary in textbooks as a basis for the choice of supplementary readers, at best, is only a partial solution of the vocabulary problem; vocabulary counts show only a small percentage of words that are repeated a sufficient number of times to insure mastery, so that deferred review of only half learned words is likely to prove a wasteful method.

6. The most desirable procedure for evaluating the vocabulary content of readers is to make use of both frequency and common vocabulary tables; such a procedure has not proved practical because it necessitates the costly method of making tables to supplement those already in use.

7. It seems logical that a solution of the vocabulary problem could be more easily found by using only one series of reading textbooks in any one school. Los Angeles found this procedure essential in order to provide an opportunity for the successful teaching of reading (1919, 53:56-85).

8. Factual form of presentation proved to be an efficient type for the assimilation of facts.

9. Poetry, while enjoyed by children, has come to form too large a part of primary reading materials.

10. The use of a combination of standard vocabulary lists should prove of greater benefit than a restricted use of one such list.

11. Criteria, for the selection of primary vocabularies, should be based on the utility, interest, and ease-of-learning motives.

12. Studies seem to indicate that words to be mastered from

meaningful content should be repeated, in context, a minimum of twenty times in regular class work.

13. The use of a mastery or minimum word list should prove of benefit as a teaching device for promoting the development of reading ability.

CHAPTER IV

READING INTERESTS

Pupil Interest as a Regrading Factor in Prose

The present philosophy of education concerning reading, places more weight in the choice of reading materials upon what children find interesting. The use of an adult standard alone as to what is interesting is being supplemented by guidance from the child as to what he finds interesting. Studies attempting to discover what selections and what types of selections are best liked by children have helped to point the way to the use of more appropriate materials.

Bruner conducted a study in fourth, fifth, and sixth grade, to determine basic reading materials through children's interests and adult judgment, involving 50,000 children and 1,500 teachers. The study was divided into five phases, the first three of which were related directly to children's interest reactions. Phases one and two attempted to find out, through spontaneous questions and questions formulated by specialists, what interests children had in reading materials, and phase three had to do with the preparation of materials satisfying the interests previously discovered. Phase four was the selection of the most appropriate literary prose selections most frequently and least frequently used from many courses of study and textbooks. Phase five was the actual classroom experimentation

with those selections deemed appropriate by teachers. Contrary to the usual practice of using or offering as more acceptable the most frequently used selections, Bruner included in his study many selections which appeared less frequently in a wide range of material. The result was that of the ten selections receiving the highest interest ranking in the three grades, nine came from those appearing least frequently in the courses of study and textbooks. In comparing the least frequently used and the most frequently used selections, when children's interests and teacher's judgments are employed as evaluating criteria, Bruner indicated (1929, 11:299-301) that much used literary selections, while not listed among the highest or lowest ranking ten of the 153 selections, rank as a whole a little higher than seldom used literary selections. The descriptive type of informational selection ranked lower than any other type of selection but Bruner says, (1929, 11:301) "informational selections of the story, and particularly of the story-dramatic, type can be written which compare most favorably with literary selections." The tenth highest ranking selection, the other nine being the least used literary selections, was a newly written informational selection.

Additional results of the study showed that the grade placement of 14.6 per cent of the most frequently used literary material and 26.8 per cent of the least frequently used agreed with present practice; also that 36.5 per cent of the most frequently used selections should be moved higher and 48.8 per cent moved to lower grades.

As a result of the study the following conclusions governing the selection of reading materials were listed as being reasonable (1929,11:304)

> It is educationally desirable that selections of the informational type as well as both most and least used literary material be included. That new life is needed in the reading materials presented to children is almost universally accepted. Since none of the most used literary selections found its way into the list of the highest 10 in this experiment, there seems to be sufficient evidence that appropriate new materials can and should be found.

The following balance of reading material was assumed to be adequate:

30 per cent to be selections most used in textbooks and reading courses.

40 per cent to be selections least frequently used.

30 per cent of the material to be informational.

While this study primarily concerns intermediate grades there are two results which have a more or less direct relationship to primary material. In the first place, less frequently used material, material that in other studies such as Nesmith's (see page 27) was not used because of lack of frequency, was found to be appropriate and of high interest value. This is not contrary to other findings as studies have accepted frequency of use as a standard for judging the desirability of much material. On this basis much material has not been included in the various studies pertaining to its evaluation and proper grade placement. Bruner's study shows that the less frequently used selections may furnish interesting and worthy material.

In the second place, contrary to the findings of Nesmith and Uhl, Bruner found a large percentage of the most frequently used selections in

need of regrading downward. Nesmith found that the grade placement of frequently occurring selections was in approximately 83 per cent agreement with the grade placement that Uhl had experimentally determined as correct. This figure does not agree in any way with the 14.6 per cent correct grade placement found by Bruner. Uhl found that pupil's and teacher's judgments had indicated that the main reason for lack of proper grading was due to over maturity of selections. This would require moving selections to higher grades rather than to lower grades as the results of Bruner's study showed. The inference that may be drawn from the comparison of these studies is that no one study can be used as an authoritative source for information concerning grade placement of materials based on reading interests of children and teachers' judgments.

The results of Bruner's study would have to be discounted if we were to accept Stone's criticism. Stone says, (1931, 72:230)

> An attempt has been made to show that the data presented by Dr. Bruner ..., do not constitute a safe basis for grade location of the selections studied. The writer holds that the initial grade placement of the selections on the basis of expert opinion, as reflected in courses of study and textbooks, is probably better than the final grade placement obtained from using interest-ranking data without any measure of reliability.

Admitting that certain inconsistencies, pointed out by Stone, may appear in Bruner's study, the method and the scope of the study is not materially different from that of Uhl. The two studies that produced such different results were both based on reading interest of pupils' and teachers' judgments. Stone's statement that, "interest-ranking data" was "used as

the sole criterion for grade placement," is not borne out by Bruner's own statement to the effect that, "when children's interests and teachers' judgments are employed as evaluating criteria," the results noted in the study were obtained. The opinions of experts as reflected in courses of study and textbooks have repeatedly been found wanting. It might be well to consider the opinions of teachers who use the reading materials in their regular class work. Bruner may be criticised for not subjecting his results to statistical treatment but this should not invalidate the entire study.

Another point made by Stone was that (1931,72:230),

> interest appeal is not a satisfactory sole criterion for grade location of reading selections. Other factors, such as difficulty of comprehension as determined by vocabulary burden, sentence structure, and tests of comprehension of the significant meanings by the pupils, should be considered as well as interest appeal in determining grade location of literary selections.

Herein appears an assumption that facts do not substantiate. Interest is not a factor that appears or can be separated from the factor of difficulty of material. Uhl found for instance that the correlation between pupil's interest and comprehension was either "marked" or "high" for all grades (1924, 81:64). Pupils comprehending a standard reading selection are likely to be interested in it, or if they are interested in it they are likely to comprehend it.

In "A Study of the Effect of the Interest of a Passage on Learning Vocabulary," (1930, 60:87) O'Shea concluded that,

> ... perhaps the final conclusion should be that mild interest in a reading passage is more favorable

to vocabulary improvement than either great or little interest.

The importance of this conclusion should be taken into consideration in the selection of material. It is easy to understand how lack of interest would result in a situation where vocabulary building and the attempt to teach new interests would finally result in the formalistic type of teaching which is apt to be so barren of results. On the other hand intensely interesting selections are apt to be those which offer fewif any vocabulary or construction obstacles and hence would tend to be below rather than equal to the pupil's reading level. In addition, ease of reading would heighten the concentration on the story or dramatic element so that little attention would be given to any new obstacles, the mastery of which would promote the development of a mature reading ability.

O'Shea's finding that the level of intelligence apparently has little to do with a child's degree of interest in a given book does not agree with a conclusion reached by Lewerens (1929, 52:14). Lewerens found in evaluating books read and enjoyed by children that books are not only enjoyed by children according to age but also according to mentality. Uhl in a study of the interest and comprehension ability of 529 children found (1924, 81: 136) the results suggested that there may be a very close relationship between general intelligence and interest. The fact that there is a close relationship between reading ability, comprehension, and general intelligence, would warrant the assumption that interest in a given book would be greatly affected by the level of intelligence of the reader.

Uhl (1924, 81 Chapter VI 97-160) in a comprehensive study of

children's interest in reading involving approximately 3,000 teachers and an unnamed number of pupils found that there was a high correlation between the judgments of pupils and teachers as to what qualities go to make up the elements of interest in reading materials. The findings concerning the desirable and undesirable qualities of materials will be discussed in a later section.

The manner in which the experiment was conducted resulted in responses on selections that would most likely be considered a body of most frequently used materials. The results showed that many of these selections were too difficult for the grades in which they were taught. The most frequent undesirable quality of selections was overmaturity, consisting of such elements as hard words, unfamiliar subject matter, and abstract or hard symbolism. Such qualities as "too childish" were mentioned infrequently. As a result of his study Uhl compiled a list of superior selection and a list of selections that should be avoided. He placed emphasis upon the importance of consulting children in the selection and organization of materials of reading. This is contrary to the opinion of Stone (see page 64) but in keeping with Buckingham's idea. Buckingham says, 1924:12- 17-18)

> ... I do not mean that we should not teach children interests which they do not already possess; nor do I mean to subscribe to the idea that interest is the only factor to be considered. But whether it is interest or some idea of the good of the child, still it is in some way from the child and not from some other source that guidance must be secured.

Pupil Interest as a Regrading Factor in Poetry

Eckert in a study of "Children's Choice of Poems" (1928, 24:192) concluded that an adult's judgment of what is good poetry for children too seldom agrees with the child's idea in the matter. The study consisted of reading three groups of five poems each to a number of different classes. Four poems in each group were taken from a conventional textbook while the fifth was a non-textbook poem. The pupils were asked to state their preferance for only one poem. The results showed that in eight out of nine groups, the poem from a non-textbook source had the greatest number of first choices. Assuming that the poems in the textbooks were placed there as a result of adult judgment and not as a result of chance or tradition, Eckert's conclusion strengthens the position previously stated, that, guidance in selecting and grading materials should be obtained from the children themselves.

Huber's scientific investigation of children's poetry was a most comprehensive study. Approximately two thirds of the material used in the experiment was gathered from about 900 courses of study and a large number of the more widely used textbooks. Opinions of recognised leaders in children's literature dictated an additional third of the material. This consisted largely of modern verse and poetry not previously used in textbooks. Approximately 100 poems for each grade, from one to eight, were published in experimental form. Each booklet of poems was used over a range of five grades. This rotation made it possible to have poems thought by present practice to be suitable for a certain grade used in five differ-

ent grades. Twelve definite reactions received from approximately 50,000 children were statistically treated so that each poem received a score comparable to the score received by every other poem in the experiment.

The results showed that of 573 different poems used 38 received a score so low in all grades that they should form a "black list" while 59 ranked among the upper 50 poems of three or more grades. A startling figure resulting from the study was that present practice in grade location of poems, as determined by traditional placement and judgments of experts, was only 39 per cent accurate as compared with children's choices. The changes necessary to regrade the remaining 69 per cent of the poems would require about as many poems being reduced to lower grades as being raised to higher ones. This is in rather close agreement with Bruner's study which, using prose selections, found it advisable as determined by pupil and teacher judgment to move approximately 49 per cent of the selections used to lower grades and 37 per cent to higher grades. It is not in close agreement, however, with Uhl's study which used both prose and poetry and found the chief difficulty with many selections was overmaturity, necessitating a regrading upward.

Huber states (1926, 45:289),

> If the findings of this experiment are accepted they point with convincingness to the importance of proper grade placement in the use of poetry.

In much the same vein as Uhl, Bruner, Eckert, and Buckingham, Huber believes that chance inclusion, resulting in a fixation of usage with little consideration of content, does not necessarily fit poetry for enjoyment of children. There were no pronounced trends of interest discernible at

different levels of growth although it was possible to detect an evolution of taste in theme. The majority of poems preferred in the various grades contained action, plot, and humor.

Interest in Factual Material

Discussion in Chapter II brought out certain points concerning the philosophical justification for the inclusion of factual material. Discussion in Chapter III showed that it is an efficient type of material under certain learning conditions. The question as to whether children find factual selections of interest is also of some concern if materials are to be graded and evaluated with some consideration for pupil's interests as well as the judgment of adult experts. Uhl found (1924, 81:145-148) for pupils above the primary level, that the standard reading selections in the informational material had slight appeal for children, but informational matter written especially for such use was highly interesting. Bruner found (see page 2) the same situation to be true in his study and advocates the use of the story or the story-dramatic type for informational material. Dunn says (1921, 28:49) that if factual material contains a few important elemental interest qualities it becomes as interesting to the children as fiction.

Smith in an investigation of children's interests in different types of stories found that factual material ranked very high in interest appeal. Using as the degree of appeal the children's interest in studying the story, in discussions concerning it, and in the desire to reread, it was found that "realistic stories," consisting of "realistic industry," realistic

nature," and "realistic health," were second only to "folk tales." "Entertaining realistic stories" were found to have a lower appeal than informational subjects. As the study was carried on in connection with the development of a reading course it is very likely that the informational material was prepared especially for use in the primary grades (1926,69:4).

Gates (1931, 32:656-70) and others conducted a very comprehensive experiment in the primary grades with informational material. The experiment was divided into a number of sections each succeeding study progressing as a result of the previous study. Al ogether there were sixteen separate investigations grouped to form five distinct sections or experiments of the study. In the first experiment 268 different paired selections, 124 of which were informative, were read to or by 2,232 pupils who made 41,976 choices as to the selections they liked best. The result showed that 72.3 per cent of the votes favored the narrative while 27.7 per cent favored the informative. Using informative selections as they were and not as they might have been, resulted in informative materials being preferred approximately one third of the time.

In the second experiment fifteen narrative selections and fifteen informative selections, judged to be of equal merit, were used with 150 second and third grade pupils. The results showed a gain for the informative materials, approximately two-fifths of the votes were for it. In an analysis of factors contributing to and detracting from interest, it was found that no sex differences were apparent in preference for narrative selections, that there was no consistent change of influence of age and grade within the primary grades, that preference, for narrative or informational does not

vary with intelligence, and that material to be suitable should be adjusted to the child"s"emotional pattern and related to the "developmental level" of the pupil at the time."

The third experiment was conducted to find the "primary or irreducible" factors of interest and will be discussed in the next section. The fourth experiment, using twelve selections each of informative and narrative material, showed, after they were used in 764 comparisons by students, that when the utility motive enters into consideration informative selections become more interesting. The pupil's responses showed about equal preferences for the two types. Results seemed to indicate particular "sets," developed by habituating certain procedures such as the "story period" or the "recreatory information hour," influenced to a slight extent the appeal of informative material.

The fifth experiment resulted in the conclusion that informational selections develop their highest degree of interest and usefulness when they are related to a topic or project. Eight topical units made up respectively of selections of informative and narrative material related to a general theme with comprehension exercises and questions were used in typical classes. After the pupils were acquainted with the materials they were given an opportunity of either reading attractive stories in school readers and other books or using their time working with either the narrative or informational experimental materials. Over an extended period of time results showed that in six different classes 91.5 per cent of the children favored the experimental narrative while 89.4 per cent favored the experimental informative selections. The frequencies of the appeal of

narrative and informative selections were about equal while both were strongly favored over isolated stories.

The strong interest appeal of appropriate factual material compares most favorably with the interest appeal of appropriate narrative material and as shown by children's approval of same, should form a generous part of primary reading material. Following is a summarizing conclusion by Gates of the first four experiments in the study.

> Informative materials should appeal to children's interests when they are written with high literary quality, when they are of proper difficulty, when they represent suitability in adjustment to the pupil's developmental status, and when they incorporate some or all of such interest-producing elements as surprise, liveliness, humor, animalness, and conversation (1931, 32:665-66).

Elements and Qualities of Interest

Several comprehensive studies and a few lesser ones have attempted to find out what basic elements appear in selections that children have found interesting. With this information determined reasonably well, it would be possible to evaluate existing material or write new material so that selections in use would avoid the undesirable barrenness of uninteresting content.

Some of the very earliest studies of children's interest in reading materials produced doubtful results because the technique used was based on the ability of children to recall previous reading experiences. Dunn produced one of the first comprehensive, scientifically-controlled studies on interest in reading. Eight women judges classified 243 samples of primary reading matter of presumably high interest value. As a result 31

selections ranking high in interest value and representing a wide range of elemental qualities were chosen for actual testing purposes. The thirty one samples were arranged in pairs in order to obtain a comparison of certain qualities of likeness and difference. Ten additional pairs of samples were used to serve as a check. The forty pairs of samples were read to 195 different classes resulting in a total of 17,000 individual interest votes. After the data was subjected to exacting statistical treatment Dunn concluded that the characteristics which arouse interest are (1921, 23:47):

> surprise and plot for both sexes, animalness for boys, and childness, familiar experiences, and to a lesser degree repetition and conversation for girls. It is significant that the interest value of surprise outranks that of plot, since thereby a large amount of factual material, lacking the story element, but abounding in elements of wonder and unexpectedness, is of promise as affording interesting reading matter for primary children.

Dunn found by the process of partial correlation that the two elements of "liveliness" and "fancifulness", contrary to the generally accepted idea that they add to the interest of primary material, actually are of indifferent value. The study indicates that the fancifulness of fairy lore is not the reason for its appeal. Other factors which it possess, "such as surprise, plot, childness, animalness, or familiar experience," is responsible for its appeal. These elements embodied in true or realistic selections would cause them to be equally interesting. It was found also that verse form is not intrinsically of interest but owes its appeal to the inclusionof the interest elements listed above. No indication

was found for the necessity for sex differentiation in the choice of materials. Certain differences between some of the preferences of boys and girls could easily be met by a variety of reading matter.

The third experiment of Gates, for the purpose of determining the "primary or irreducible factors" of interest, followed the method used by Dunn. Instead of using twenty primary characteristics of interest, shown in Table XV, as Dunn had done, Gates used only fourteen. The thirty selections used in the experiment were first divided into six types and then rated by ten specialists in children's literature on a nine point scale for each of the fourteen characteristics. Approximately 15,000 choices from children of the primary grades were obtained after a sufficient number of pairings and readings of the selections had been made.

Table XV

Elements of Interest Used by Dunn the Presence or Absence of Which Determine Appeal of Reading Material

1. Verse form	11. Familiar experiences
2. Style	12. Conversation
3. Humor	13. Poeticalness
4. Surprise	14. Boyness
5. Plot	15. Girlness
6. Liveliness	16. Childness
7. Fanciqifulness	17. Adultness
8. Realism	18. Moralness
9. Repetition	19. Narrativeness
10. Imagery	11. Animalness

The results of using a statistical method of partial correlation on the various ratings obtained are shown in Table XVI.

Table XVI*

Correlation of Each of Fourteen Qualities with Children's Interest When the Influence of All the Other Thirteen Qualities are Rendered Constant by Partial Correlation

Quality	Correlation	Quality	Correlation
Surprise	.35	Poeticalness	.07
Liveliness	.23	Familiarity	.06
Animalness	.18	Repetition	.04
Humor	.15	Fancifulness	.01
Conversation	.13	Realism	.00
Plot	.08	Verse Form	.00
Narrativeness	.08	Moralness	-.15

*1931, 32:663

The fact that no correlations are high, indicates the interdependence of the various elements in producing a high degree of interest in reading materials. The incorporation of more of the strongest interest producing elements insures a stronger appeal to children's interests.

Table XVII

Comparison of Interest Qualities from Dunn's and Gates' Studies

Relative Value	Dunn	Gates
High positive value	Surprise	Surprise
	Plot	Liveliness
	Animalness	Animalness
	Childness	Humor
	Conversation	Conversation

Relative Values	Dunn	Gates
Slightly Favorable or indifferent value	Narrativeness	Plot Narrativeness Poeticalness
	Familiar experience	Familiarity
	Repetition	Repetition
	Fancifulness	Fancifulness
	Moralness	Realism
Negative value	Liveliness Verse form Humor	Moralizing

The result of arbitrarily dividing the various elements into three divisions (after Dunn) in order to compare the findings of the two similar studies, appears in Table XVII. It will be noted that there are several important differences in the findings. All differences in results are slight with the exception of "liveliness" and "humor" which Dunn found to be of negative value while Gates found them to be of high positive value. The one outstanding similarity is that surprise was found to be the most important element in both studies. Table XVIII, which follows, is an attempt to combine the findings of the two studies, influenced by evidence offered by other studies, in order to produce a simplified list that will show the composite result.

Table XVIII

A List of Interest Elements Used by Dunn and Gates Arranged in Groups from Most to Least Appealing from the Composite Evidence of Four Studies

High positive value	Favorable value	Indifferent or Negative value
Surprise	Narrativeness	Fancifulness

Animalness	Familiarity	Realism
Conversation	Repetition	Verse Form
Plot	Poeticalness	Moralizing
Liveliness	Childness	
	Humor	

Dowell and Garrison in "A Study of Reading Interests of Third Grade Subjects" found the interest elements contained in TableXIX to be the most popular. The results showed that "most of the stories so much liked by children have a variety of elements of interest," and that children in widely different social groups, show no apparent difference in interest in given selections.

Table XX shows the elements of interest Uhl found to be most important in primary reading materials. Such items as "interesting characters," "interesting repetition," etc., give the impression that too much is left to the reader when he has to determine what makes characters interesting and what makes repetition interesting. One has to assume that other qualities in conjunction with repetition or characters makes them interesting but what these qualities are is not disclosed by the data.

Dowell's and Uhl's studies show the same high relative position of "animals," as an interest quality, found in Dunn's and Gates' studies. Dunn was the only one out of the four who did not rank "humor" as a desirable quality. In Table XVIII humor was moved to the favorable column because of the weight given to it by the other three studies. Uhl says (1924, 81:118) "Interesting action is the best guarantee of success for a reading selection; that action may be simple and non-dramatic or of a dramatic or adventurous type." This is in agreement with Gates as he found

TABLE XIX*

The Ten Most Popular Interest Elements in Third Grade Subjects

Interest elements	Boys	Girls	Total
Kindness	72	79	151
Bravery	40	54	94
Happiness and Beauty	41	22	63
Humor	49	12	61
Animals	31	13	44
Story Quality	15	17	32
Achievement	21	10	31
Love	11	20	31
Bible stories	17	12	29
Wisdom	16	10	26

6

*1931, 22:205

TABLE XX*

The Shifting of Ranks of the Most Important Desirable Qualities of Reading Materials

*Adopted from a Diagram by Uhl. Grades IV to VIII Omitted.

Grade I	Grade II	Grade III
About animals	Dramatic action	Dramatic action
Dramatic action	About animals	Fairy and supernatural
Interesting repetition	Fairy and supernatural	About animals
Interesting action	Interesting action	Kindness and faithfulness
Dramatization	Interesting repetition	Interesting action
Fairy and supernatural	Kindness and faithfulness	Interesting characters
Kindness and faithfulness	Dramatization	Dramatization
Humor	Humor	Interesting problems
Interesting characters	Interesting characters	Humor
Interesting problems	Interesting problems	Interesting repetition
Interesting information	Interesting information	Interesting inform.

"liveliness" along with "humor" of negative value. Uhl's findings justify retaining "liveliness" in the high positive value column of Table XVIII. "Fancifulness," of indifferent value in Table XVII, assumes a desirable position in Uhl's study. This is probably due to the presence in the "fairy and supernatural" selections of such elements as surprise or action. Elements of kindness, bravery, and faithfulness, do not appear in Gates' or Dunn's study but are worthy of mention. Garnet found that fourth grade children did not like stories which showed unworthy traits of character such as meanness, greed, or cruelty (1924, 27:137).

Mackintosh made a "Study of Children's Choices of Poetry" in fifth grade. One hundred poems, possessing in whole or part the dominant characteristics of rhythm, rhyme, good story, excitement, adventure, dramatic interest, seriousness, humor, and dialect, were arranged in groups of ten and read to children for enjoyment. As each poem was read each pupil scored it on a six point scale and gave his reason for liking or disliking it, while poems heard or read before were underscored. After the poems were read a check was used to mark the five best liked.

The data showed, after reasons for liking were rated and changed to percentages, that the following interest elements were operative in governing children's choices: funny, 32 per cent; relating to subject matter, 23.25 per cent; dialect, 6.95 per cent; exciting, 6.75 per cent; interesting, 6.4 per cent; war, 4.65 per cent; rhythm, 1.65 per cent; and story, .95 per cent (1924, 54:87). The results show considerable similarity to the findings of other studies. Assuming that "dialect" is equivalent to conversa-

tion and that "exciting" owes its value to surprise and plot, the tabulations in Table XVIII are further enhanced in value. The predominating influence of humor in this study and its favorable influence in other studies, shows it must exert considerable influence as an element of interest. It was found that superior selections always contained several elements of interest.

Grant and White, in a study of children's interest in reading, classified the per cent of materials appearing in fifteen primary readers under fifteen separate headings (1925, 36). The findings of the investigation were compared with the findings of a second investigation in which the responses from 600 children in regular school rooms were supplemented by data from six libraries and informal talks with children to establish percentages of material that children find interesting. The comparisons of the percentages of supply and demand appear in the following table (1925, 35:675).

TABLE XXI*

The Relation between Percentage of Supply of Primary Material in Fifteen Primary Books and the Percentage of Demand by Children

Type	Per cent supply	Per cent demand
Poetry	36.0	10.8
Folk lore	17.2	17.4
Fables	11.9	1.1
Animals	7.9	23.9
Child experiences	5.0	4.1
Fairy	5.0	20.0
Miscellaneous	4.6	8.9
Special days	3.0	0.0
Nature	2.9	1.1
Information	2.4	6.3
Historical	1.5	4.4

Table XXI* (con't)

Type	Per cent supply	Per cent demand
Riddles	1.3	0.0
Myths	1.0	0.0
Humor and bible	0.3	2.0

*Arranged from Chart by Grant.

As regards poetry the data shows the same general condition of an over supply of poetry that other studies have shown. The lack of demand for fables is probably due to their moralizing. The study in elements of interest, by Gates, shows the negative effect of moralizing as an interest factor. The largest demand was for animals; this is in line with the findings of all other interest studies. The demand for "fairy" selectionswas probably due to the appeal of liveliness, conversation, or surprise, as both Gates and Dunn agreed that "fancifulness in and of itself is not a positive interest factor."

Summary and Conclusions

1. It is desirable that some consideration be given least used literary material as a source of appropriate and interesting reading selections.

2. It seems likely that mild interest in a reading selection is more likely to prove favorable to vocabulary growth and a properly developing reading ability than either little or great interest.

3. The level of intelligence is related to a child's interest in a given selection.

4. It is desirable that some consideration be given children's interest reactions in the choice and grading of both poetry and prose.

5. Studies of children's interest and choice of selections show the necessity for regrading, both upward and downward, a largepart of the body of material as determined by traditional placement and judgment of experts.

6. Factual material particularly suited to children has a strong interest appeal.

7. Desirable "primary of irreducible" factors of interest of high or very favorable value are: surprise, animalness, conversation, plot, liveliness, narrativeness, familiarity, repetition, poeticalness, childness, and humor.

8. Other noteworthy interest factors are faithfulness, kindness, and bravery.

9. Superior selections invariably contain two or more elements of interest.

CHAPTER V

FORMAT AND HYGIENIC REQUIREMENTS

Physical Makeup

Interest and inspiration are contagious. Teachers can do much to develop reading zeal by an enthusiastic presentation of reading selections. It often happens that the most popular stories or books in a class are those which the teacher most preferred. Teacher inspiration is most necessary and desirable if the majority of school children are ever to form a love for reading, but it has its limitations. With the wide differences found in the nativecapacity and experiential background of pupils the teacher's job of inspiring a love for reading becomes more difficult. In order to encourage and stimulate children to read, materials should be made as intrinsically interesting and desirable as possible.

Young children are easily influenced by the color, shape, or size of objects in the world about them. This preference for certain physical characteristics, it seems, would naturally exert its influense in the choice of books. Bamberger found that the physical characteristics of a book do exert an influense upon children's selections. Favorite stories were partially read to primary children to engage their interest and build up their desire to read the book further. The pupils desiring to finish the story were then given an opportunity to choose from at least five

different editions, differing in size, binding, type of illustration, and amount of content. An analysis of the recording of choice and reasons given for making selections led to the following conclusions (1922, 2: 131-32):

1. Primary children find book sizes of about seven and one-half inches long by five inches wide and one inch thick to be the most acceptable.

2. The color of the cover exerts an influence. Blue, red, and yellow, of sufficient brightness are favorite colors for covers.

3. Children prefer large, full-paged pictures rather than smaller ones inserted irregularly. A probable minimum of twenty-five per cent of the book space should be devoted to pictures.

4. Primary children show a preference for rather crude and elementary colors having a high degree of saturation and brightness. The older children exhibit a growing desire for the softer tints and tones.

5. Primary children are highly attracted by pictures that have story telling qualities.

6. Pictures of humor and action make an appeal to primary children.

7. Primary children prefer the books with fewer lines to a page. An average width of one inch for margins appears to be the most attractive.

8. There are but slight differences in matters of preference in the first three grades. The fondness of the first grade children for diminutive volumes is apparent. The second and third grades show a development in taste for artistic appreciation of pictures. The first grade showed a greater fondness for crude, primary colors.

9. All children are apparently influenced by the titles. The word "reader" appearing in a title seems to exert a negative influence on the older primary children.

While the results of this study require further experimentation for verification they point to a type of consideration to which more attention could be given.

Hygienic Requirements

A very important phase in the preparation of a good textbook is the proper balance of the type page. Any condition which hinders the physiological processes involved in reading, either consciously or unconsciously, is an obstacle to a properly developing reading ability. Conditions that make legibility of printed matter and ease of reading difficult causes undue fatigue and detracts from the progress that may result from efficient teaching and satisfactory and worthwhile content.

Paper and Ink

Agreement as to the color of paper and ink is practically unanimous. Experimenters have found that white unglazed paper of sufficient thickness to prevent the printed word from showing through on the opposite side gives the best results. Hale found that Shaw, Huey, Griffing and Franz, Hall and Ames, Cohn, and a report of the American Library Association, agree upon white unglazed paper being the best for textbooks (1924, 40:27). The use of black ink is necessary in order to obtain the greatest contrast between the paper and the printing.

Type Face

The characteristics of type faces are closely associated with legibility. Common experience shows that of two type faces of equal size the most legible is the one which is the least ornate. Gray, after summarizing the results obtained by experimenters, concluded that plain type styles are much more legible than ornate styles (1924, 37:192). There is no evidence as to which of the plainer faces of type is more legible.

The thickness of the vertical stroke of letters is an important consideration in ease of reading. Huey, basing his conclusions on the works of Cohn and Sack, recommends that .25 millimeters should be the minimum thickness with preference for .3 millimeters (1919, 46:406). Rothlein found that for adults the optimum heaviness of face seemed to lie between the bold face and the light face type (1912, 66:34). Tinker and Paterson found in an experiment with adults that text printed in lower case was more legible than material printed either in all capitals or italics (1928, 77:368).

Leading

Griffin and Franz found that leaded type was slightly easier to read. The amount of leading was not specified. They stated that greater spacing was expensive and the decrease of fatigue not as great as might be achieved somecther way, presumably by enlarging the size of type. Huey states that Cohn and Sack were in favor of a minimum of 2.5 millimeters of leading. It is held that leading is doubtless a mistake when the size of the type is below 1.5 millimeters. The type size should be increased in-

stead. Leading is favored in all school books, "at least but hardly more than Cohn's minimum of 2.5 millimeters" (1919, 46:408). Upon what basis Huey changes Cohn's minimum amount of leading to a maximum is not shown. The above standard is intended for adults and older children. The final recommendations arethat the standards of Shaw would serve, " as a most usable approximate statement of what might be used." The table on page 88 shows that Shaw's standards call for 4.5 millimeters of leading for the first grade, 4 millimeters for second and third grade, and 3.6 millimeters for fourth grade. Buckingham shows that Shaw confuses leading with interlinear space. He states that adding 4.5 millimeters of leading to the usual space between the lines of 18 point type when set solid would give approximately the ridiculous amount of fifteen points of interlinear space (1931, 13:98).

Blackhurst recommends as a result of experimentation that about 4.0 millimeters of leading should be used in beginning first grade with a gradual reduction to about 1.3 millimeters as material approaches in difficulty that appropriate for the second grade (1923, 9:364). It is impossible to compare this recommendation with other findings concerning leading because Blackhurst measured the space between the ascenders of one line and descenders of the next rather than between such letters as m, n, etc., on successive lines. As Blackhurst does not recommend changing the size of type in first grade it seems very doubtful that such a decided change in leading would not result in poor legibility. Buckingham says, "the setting of twenty-four point type with one-point leading (approximately equivalent to Blackhurst's measurement of 1.3 millimeters) would be

ridiculous." Blackhurst's recommendations are indeed impractical when one considers that decisions as to size, number, and time, of reductions in spacing would have to be made. The extra cost involved would also be considerable. In 1928 Blackhurst abandons his previous recommendations. Upon the basis of comparison of objective studies by Gray he states that the most appropriate amount of leading for different sizes of type has not been determined (1928, 6:103).

According to Wheeler leading should be specified according to type size, style of type, and the extra large space between words, if any. He says (1928, 83:28)

> The statement that for first-grade books the type should be leaded ____ points does not mean anything by itself.

This is in agreement with Buckingham who contends, and rightly so, that size of type, length of line, and interlinear spacing or leading, are factors that are inseparable. In printing, neither exists by itself, so it is impossible to designate appropriate size of leading without giving the corresponding size of type and length of line.

Size of Type

The question of legibility of type and the most efficient standards for type-setting have been subjects for experimentation since 1878. Burnham gives Javal credit for being the first one to study scientifically the hygienic conditions of reading. Javal made no specific recommendations about type size, but considered it important that type size for different classes should be experimentally determined so that no pupil would need to

bring his eyes too near the book (1892, 14:49). Burnham, quoting the conclusions of Cohn and Weber, gave 1.5 millimeters as the minimum height of letters. (1) It is stated that according to Weber type sizes greater than 2 millimeters retarded the speed of reading. Type sizes for adults, according to these early investigators, approximately calls for a minimum of ten-point and a maximum of twelve-point type. Eulenberg and Bach, in 1889, recommended larger type for the lower grades.

Griffing and Franz, in an experiment with adults using two type sizes, namely 1.8 millimeters and .9 millimeters, found it took about nine-tenths as much time to read the larger of the two types. Additional experiments with type larger than 1.8 millimeters showed that legibility increased with size. Evidently the results did not warrant specific recommendations concerning the size of the larger type (1896, 39:530). They concluded that no type less than 1.5 millimeters in height should ever be used as fatigue increases rapidly even before the size becomes as small as this. This conclusion agrees with the recommendation of Burnham. In an experiment with adults, Tinker and Paterson used five different type sizes, namely, 6,8,10,12, and 14 point, with a constant line length of 80 millimeters. The conclusion was reached that 10-point type allowed the most rapid reading. Increases in speed for 10-point over the other four sizes ranged from 5.2 per cent to 6.9 per cent (1929, 78:129).

Shaw was the first one to make specific recommendations as to size

(1) Height of letters refers to those letters which have neither ascenders nor descenders. Specifically it is assumed, unless stated to the contrary, that the investigators mean the tallness of the m in any particular type size is the height of the letter.

of type for young children. His recommendations were apparently based on the opinions of Eulenberg and Bach concerning the need for larger type in lower grades, as well as the findings of Cohn, Weber, Javal, and Griffing and Franz. Shaw's conclusions regarding type size have been used perhaps more authoritatively than any other single study and yet he offers no statement as to how or where he obtained them. Huey, after summarizing and quoting Cohn, Weber, and Griffing and Franz, gives Shaw's figures as the most usable approximate statement of what might be used (1919, 46:416). Buckingham cites instances where Shaw's figures were incorporated in a textbook and in a committee report with a resulting enhancement of value. Buckingham says, (1931, 13:100)

> It appears that with the lapse of time and with sufficient repetition these figures have now come to be accepted without question.

Gray found that, (1925, 37:200)

> Current practice corresponds very closely with the recommendations of Huey and Shaw and has doubtless been influenced very largely by them.

The following table contains the recommendations made by Shaw (1901, 68: 177-78).

Table XXII*

Type Dimensions Recommended by Shaw

* 1931, 13:97

Year	Minimum size of type in MM.	Leading in MM.
First	2.6	4.5
Second	2.0	4.0
Third	2.0	4.0
Fourth	1.8	3.6

Buckingham discusses at length the sizes of type and leading recommended by Shaw and their relationship to actual sizes found in the print shop. In no case do recommended sizes correspond exactly with type sizes in use today. The recommendations concerning leading especially show a lack of understanding concerning standards of the printing trade.

> Shaw's statements illustrate two points: first, that so-called 'standards' which have subsequently been uncritically adopted by educational people have apparently been plucked out of the air; and second, that these standards have little reference to present printing conditions (1931, 13:99.

Blackhurst, in an experiment relating to type size in the first four grades, concluded that 24-point is most readable in the first two grades and 18-point type in grades three and four (1922, 4:700). Five years later apparently using the results of the same experiment upon which he based his original conclusions, Blackhurst recommends 24-point type for the first grade and 18-point for the second, third, and fourth grade (1927, 5:61). A year later he emphasizes the importance of the size of type and states that until further evidence is secured the recommendations of Shaw and Huey should be followed. Again Shaw's figures, with no experimental evidence to verify their correctness, are enhanced in value. However, Blackhurst says (1928, 6:103)

> The writer is personally convinced from his own experiments that type below 18-point, height of small letters 2.75 mm., is undesirable in all first four grades.

Standards of the British Association for the Advancement of Science adopted in 1913 agree more nearly with the recommendations of Huey and

Shaw than those of Blackhurst. This is contrary to an opinion expressed by Gray. He says (1925, 37:199)

> These conclusions (those of Blackhurst) agree more nearly with the recommendations of the British committee than those of Huey and Shaw.

Gray compared the standards of the British Association with the conclusions of Blackhurst published in 1922. A comparison of the recommendations of Shaw, the British Association, and Blackhurst appears in Table XXIII. The table shows that Shaw and the British standard are in agreement as to the size of type for the third and fourth grade while Blackhurst and the British standard are in agreement only in the first grade. If Blackhurst's recommendations of 1927, where he recommends 18-point type for the second grade, are used there is no choice as to the amount of similarity. Blackhurst's figures are in agreement with the British standard for the first and second grades while Shaw's are in agreement with the third and fourth grades.

Table XXIII

Comparisons of Recommendations as to Size of Type Made by Shaw, Blackhurst, and the British Association for the Advancement of Science

Grade	Shaw	British Association	Blackhurst
First	18 pt. *	24 pt.	24 pt.
Second	14	18	24
Third	14	14	18
Fourth	12	12	18

*Recommendations originally given in mm. Type sizes given in pts. do not exactly correspond to size in mm. The nearest next largest size in pts. is given.

The standards of the British Association for the Advancement of Science are given in the following table.

Table XXIV*

The Standards of the British Association for the Advancement of Science, 1913

Age of Reader	Minimal Height of Face of Short Letters, in mm.	Minimal Interlinear Space in mm.	Maximal Length of Measure of Line, in mm.
Under 7 yrs. (Grade I)	3.5	6.5	----
7-8 yrs. (Grade II)	2.5	4.0	100
8-9 yrs. (Grade III)	2.0	2.9	93
9-12 yrs. (Grades IV-VI)	1.8	2.4	93
Over 12 yrs.	1.58	2.2	93

*1931, 13:101

The British standards, as may be seen in Table XXIII, call for 24-point for first grade, 18-point for second grade, 14-point for third grade, and 12-point type for fourth grade. Buckingham points out that 18-point type set with an interlinear space of 4 millimeters would in general require one point of leading and would present a decidedly crowded appearance. That Buckingham does not think that the recommendations of the British Association are scientifically reliable may be gathered from the following (1931, 13:100)

> Apparently no experimental evidence was secured by this committee. Nevertheless, based upon what one may suppose to be a summary of existing evidence, together with the judgement of the Committee, a "standard Typographical Table" was offered.

The tendency of type size actually in use was studied by Blackhurst. In general it was found that there was an increase in size of type during the period from 1890 to 1900. The tendencies from 1910 to 1920 showed that type size corresponded rather closely to the recommendations made by Shaw (1921, 7:407).

Experiments by Judd lead him to conclude that eye movements are little affected by changes in sensory content through wide limits (1918, 49:53). Gilliland in a similar though more elaborate study arrived at the same conclusion (1923, 34:146).

> Children are not so greatly affected as adults by changes in the size of type .... Size of type, therefore, is not relatively as important a factor in the reading of children as had been supposed.

Indiscriminate use of type size should not follow as a resultof these findings. While it may be true that there is not much difference in legibility of type through wide ranges in size it yet remains to be proved that any change in type size does not have a decided effect on the amount of resultant fatigue.

Length of Line

Regularity of line length is a problem that is definitely associated with books for beginners. It is a problem that no doubt originated through the use of the larger bodies of type. Printed books for older children and adults invariably show an even edge of type, with the exceptions of paragraph indentations, on both the right and left hand margins. This is accomplished by hyphenating words and dividing what space may remain at the end of the line between the other words in that line. Such additional space added

between words does not noticeably affect the reading. It becomes increasingly difficult when using large type to divide what space might be left at the end of the line between the few words in the line so that it does not interfere with thelegibility of the printed matter. It is much easier to set large type with irregular margins. On the other hand the argument has been advanced that irregular lines allow words to be printed more effectively in thought units. Irregular lines are also supposed to make it easier for the child to find the beginning of each successive line.

Blackhurst found in a survey of books that from 1890 to 1910 there was a tendency to make the left hand margin regular, leaving the right irregular. The tendency from 1910 on was to make both margins irregular (1921, 7:408).

Dearborn, Buswell, and others have found through their research on eye movements that a definite rhythm is established as the eye moves from fixation-pause to fixation-pause and that this rhythm is disturbed by unusual conditions in sensory content. It would not seem wise, therefore, to deliberately allow changes in line length to interfere with the development of proper eye movements. Dearborn says that uniformity in length of line for beginners is undoubtedly important because,

> The difficulties of accurate fixation may be increased even for the practiced adult reader by necessitating too frequent change of the arc of movement (1906, 19:38).

Huey agrees with Dearborn that lines should be of uniform length (1919, 46:412). Wheeler contends that eye-movement studies seem to clearly indicate that uniform lengthof lines would be desirable, and that elements of

desirable training outweigh other considerations (1929, 83:29). Other considerations, no doubt, refer to the contention that irregular margins allow printing in thought units and assist in locating the beginning of the line. Apparently, practice does not conform with the recommendations of experts in the fieldof reading.

Gray found in summarizing the investigations of Javal, Cohn and Weber that (1925, 37:194)

> There was general agreement among them that long lines are injurious because of the fatigue which results from reading them.

Huey, in summarizing the findings of Javal, stated, that after careful study Javal insisted "that the maximum should be considerably below even 90 millimeters." Another factor which is in favor of the short line, is the increasingly difficult and distracting incident of the return sweep of the eye from the end of an e line to the beginning of another, as lines become increasingly longer. Long lines are also supposed to require a greater amount of eye movement for a given amount of material than do short lines. Huey refers to Dearborn's conclusions in support of a moderate length line and concludes the 90 millimeters should be the maximum length with shorter lines preferred.(1919, 46:409) Dearborn specifically recommends lines of 75 to 85 millimeters in length with type that is 1.5 millimeters high. This recommendation was apparently for adults.

Tinker and Paterson in an experiment pertaining to length of line used 10-point type in line lengths varying from 59 millimeters to 186 millimeters. The conclusion reached was that until further evidence was offered 10-point type should be kept within the limits of 75 to 90 milli-

meters (1929, 79:213). This experiment was conducted with students and has no direct relationship to requirements for younger children.

Blackhurst experimented with line lengths of 55, 80, 90, 102, 120, and 1½ millimeters in the first four grades. He concluded that the most desirable length was from 90 to 103 millimeters with evidence that 103 millimeters was the optimum length. Anticipating a criticism which was finally made by Gates in 1931, Blackhurst says (1923, 8:330)

> While 102 millimeters were used more often than any other length in the third and second grades, there is very little to support the possible contention that previous reading habits were instrumental in determining the findings, for 102 millimeters seems preferable in the first grade with no possible opportunity in this instance to fix reading habits with respect to such a length of time.

Gray in commenting onBlackhurst's findings calls attention to the use of only one measure of efficiency, and to the fact that arguments of Huey and Dearborn for shorter lines were not answered. Tinker and Paterson, commenting on the conclusions of Blackhurst, state that the data show no significant difference between lines 90 millimeters long and those 102 millimeters long. In addition they call attention to the fact that the failure of Blackhurst to state the size of the type makes it difficult to interpret the findings (1929, 79:207). Gates strengthens the contention of Tinker and Paterson concerning the findings of Blackhurst when he says (1931, 33:4)

> The soundest interpretation of the data is that variations in the lengths of lines from 55 m.m. to 1½ m.m. produce no perceptible differences in speed or accuracy of oral reading under the conditions of the study.

The recommendations made by the British Association for the Advancement of Science, as shown by Table XXIV, call for a maximum length of 93 to 100 millimeters. This compares favorably with Blackhurst's conclusions. The recommendations of Blackhurst and the British Association refer specifically to the first four grades, those of Huey, Dearborn, Tinker, Javal and Cohn, refer to older children and adults. In 1927 (5:61) Blackhurst, apparently again interpretating his data of 1922, recommends 100 millimeters as the best length of line, but in 1928 (6:103) he states that 90 millimeters is the most acceptable length on the basis of Gray's comparison of objective studies. It is difficult to understand why Blackhurst makes no mention of his own findings in his most recent recommendation, especially since he found in a survey of books, that the tendency was to follow his recommendations rather than those of Dearborn and Huey. The average length of lines in readers printed during the period from 1910 to 1920 was 101 millimeters for grades one and four, and 102 millimeters for grades two and three (1921, 7:407).

Buckingham maintains that trying to establish a length of line irrespective of type size or interlinear spacing "is wholly artificial. None of these exists by itself" (1931, 13:103). He critizes Blackhurst for conducting separate experiments for each of the above named features. With the exception of Tinker, all who have attempted to determine an optimum length of line are equally open to this criticism. Even in the case of Tinker and Paterson no mention is made of what interlinear space should accompany 10-point type ranging in length from 75 to 90 millimeters. It seems logical that at least within certain limits, the most efficient length

of line depends on type size and interlinear spacing.

In addition to questions affecting the validity of specific studies and the necessity for considering the inseparable nature of line length, type size, and interlinear spacing, Gates advances a theory concerning the optimum length of lines that takes exception to all previous findings. He says (1931, 33:7)

> The most plausible assumption is that children do tend to become habituated to a line of the length in which materials are predominately set up, whereas they become adapted to widely different lengths so that one is as optimum as another when they have substantial experiences with materials of different lengths of line.

Gates maintains that there is no objective evidence, so far as he could discover, which shows that reading lines of 150 millimeters or larger increase fatigue, or tend to develop myopia or any other undesirable effects. His contention is that evidence seems to indicate that small and confining eye-movements are the most fatiguing and hence indicate the possibility that, "reading may be least fatiguing when the print is large and the lines long enough to permit larger and more sweeping movements" (1931, 33:2). He maintains that substantially all of the evidence, prior to the work ofBlackhurst in 1923, is speculative and unconvincing and as previously stated Blackhurst's data show no decided advantage for any given length. Blackhurst conducted his survey of the typography of school books, where he found the prevailing length of lines to be slightly above 100 millimeters, previous to his experiments and it is possible that he allowed his findings of 1921 to sway his conclusions in 1923. Gates' contention is that if Blackhurst's data justify the conclusion that 102 millimeters

is the optimum line length it is because of the practice effect of reading material set to approximately that length. Gates agrees with Gray and the National Committee on Reading that there is no assurance of the validity of any recommended length of line.

Buckingham goes still further. He not only finds recommended line lengths of no value but also tentative standards of type size and interlinear spacing. He makes two points in summarizing his analysis and discussion of studies relating to typography (1938, 13:104)

> First, that several of those who have given out standards have simply used their imagination; and second, that those who have made real investigations have obtained results of limited practical value.

Factors of Legibility and Cost

Buckingham's study is summarized separately because it differs considerably from all other previous studies. Seeing the weakness of using measurements that did not conform to printing standards, the use of the millimeter, so prevalent in the studies summarized, was reduced to a minimum. Consideration was given to the three factors of type size, line length, and leading, only as they inseparably contributed, each its share, to a desirable and acceptable unit for the printed page.

Eighteen specimens were subjected to the experimentation. In one set of specimens the variable to be measured was leading, in another length of line, and in still another size of type. An example of the first instance is where 18-point type is held constant at a length of four inches while 3,

4, and 5-point, leading is tried. When the length of line becomes the variable, 18-point type with 3-point leading is held constant in one case, while two different lengths of line are tried.

Table XXV*

The Eighteen Specimens Used in the Experiment

Size of Type	Interlinear Space: Leading	Interlinear Space: Total	Length of Line: A (4 inches, 24 picas, 101.5 mm.)	Length of Line: C (3 1/2 inches, 21 picas, 89 mm.)	Length of Line: E (2 7/16 inches, 14 5/8 picas, 61.5 mm.)
1	2	3	4	5	6
18-pt. (2.9 mm.)	3-pt.	4.50 mm.	X	X	
	4-pt.	4.90 mm.	X	X	
	5-pt.	5.20 mm.	X	X	
14-pt. (2.25 mm.)	3-pt.	3.75 mm.	X	X	X
	4-pt.	4.10 mm.	X	X	X
12-pt. (1.9 mm.)	3-pt.	3.25 mm.	X	X	X
	4-pt.	3.60 mm.	X	X	X

*(1931, 13:102)

The above tables shows the eighteen combinations of type size, leading, and length of line, that were used in the experiment. Preliminary experiments led to the choosing of the three stories that were not "distressingly different" in difficulty. Each story was printed according to the eighteen specifications outlined in Table XXV. A total of 2,010 children read the stories. Each child read the three stories, each story being different in typographical form. The time for reading each selection was noted while unlimited time was given for answering ten multiple-choice questions given as a comprehension test. There was a total of 2,337 usable

returns obtained from 779 children. The results are summarized in Table XXVI.

A few general tendencies may be noted. The record in the speed column shows a slight advantgge for the twelve-point over the fourteen-point type, with the eighteen-point in third position. The short line is read more rapidly than the long line. The relationship between comprehension and speed has a decided tendency to show that a type page which facilitates rapid reading is a little more likely to obstruct comprehension than help it, while a type page which slows down the reading rate has a tendency to increase comprehension. According to Buckingham the comprehension figures are of doubtful value because of their erratic behavior. He offers the explanation that possibly comprehension scores are of no value except as a check to make sure pupils are not bluffing. Also, that it was possible that the comprehension test was defective.

After statistically treating the speed and comprehension figures to get a combined rating, a comparison of the three possible rankings was made. While Buckingham suggests that the comprehension ranking was apparently based on inadequate scores it is maintained that little harm is done to any conclusions which may be based on the combined scores which appear in Table XXVII. Differences created by more effective comprehension measurements would be greater and would strengthen any argument based on the differences exhibited. In general the combined rankings served to place the twelve-point type in a stronger position and the eighteen-point type in a weaker position.

Table XXVI*

Median Speed and Comprehension for Each of the Eighteen Specimens

Specimens	No. of Readings	Median Speed of Reading Time in Minutes and seconds	Comprehension Rank	Comprehension Percents	Comprehension Rank
18A3	132	4:11	14	83.2	2
18A4	94	4:01	11	71.0	15
18A5	136	4:25	17	75.5	11
18C3	121	3:39	6	68.7	18
18C4	141	3:27	5	75.9	8
18C5	125	4:51	18	77.3	7
14A3	156	3:52	8	70.9	16
14A4	114	4:18	15	80.7	4
14C3	124	3:42	7	82.3	3
14C4	108	4:00	10	75.6	10
14E3	177	3:19	3	71.1	14
14E4	100	3:55	9	70.0	17
12A3	150	4:02	12	71.4	13
12A4	127	4:07	13	75.8	9
12C3	123	4:22	16	80.2	5
12C4	111	3:17	2	77.5	6
12E3	155	3:08	1	74.0	12
12E4	143	3:25	4	85.7	1
Total	2337				

*1931, 13:113

Buckingham then combines the rankings of speed, and speed and comprehension combined, with factors pertaining to cost of book making. Assuming that a manuscript of 20,000 words was to be printed in book form, the number of pages and the total type area was computed for each of the eighteen specimens. The estimate was based on the fact that 4.7 characters

are equivalent to one word and that the A line gives a type page 4 inches by 6 inches, the C line 3½ inches by 6 inches, and the E line 2 7/16 inches by 6 inches. It will be noted that a book containing the E line would be exceedingly narrow.

The table comparing readability and type area shows that none of the 12-point type occupies more than 1700 square inches while the 14-point type occupies from 2058 to 2208. The 18-point specifications run from 3234 to 3648 square inches which indicates that in the larger size type the cost is likely to be doubled. Considering the first six ranks of type area, all 12-point type, as substantially the same because of the relatively small variation in the number of square inches, specimens 12E4, 12C4, and 12E3, stand out as most desirable of all on the basis of legibility and low cost of production.

In the past it has been customary to recommend the use of a specific type line, or leading, on the basis of legibility alone. Any consideration given to cost of production was secondary. In a rough way it was understood that cost of production would mount as the type became larger but legibility was considered of such great importance that practically no thought was given to cost. In this study legibility still ranks as the major consideration but owing to the way the comparisons are made, the cost of production is brought out of a hazy background into the clear and meaningful foreground.

A table showing the actual cost of one hundred copies of a book of 20,000 words does not produce exactly the same ranking as the table on total type area. It is contended that in the long run cost of paper and presswork

will bear a more direct ratio to figures for type area than they do in the case of this particular study. Table XXVII shows a comparison of cost and the various rankings of the six most acceptable specimens.

Table XXVII*

The Six Most Legible Specimens Showing Comparison of Rankings Pertaining to Cost (Paper and Pressework) of a Book of Twenty Thousand Words, Type Area, and Legibility

Specimen	Cost of Paper and Pressework		Total Type Area Rank	Rank in Speed of Reading	Rank in Speed of Reading and Comprehension Combined
	Amount	Rank			
12C4	$ 3.68	3.5	4.5	2	2
12E3	4.38	6	1	1	3
12E4	4.75	9	6	4	1
14E3	5.55	11	9	3	6
14E3	6.98	13	13	6	10
18C4	7.50	17	16	5	5

*Rearranged from Buckingham's Table

An examination of the data shows that as legibility decreases cost increases. This relationship according to the table is rather pronounced. Table XXVII is limited to only the first six specimens with respect to rank in speed of reading. The specimens are listed in the order of their cost, the lowest cost appearing at the top of the table. The first specimen, 12C4, ranks second in speed of reading and second in speed and comprehension combined. Only one specimen of the eighteen used in the experiment was read faster and only one was read with more comprehension than specimen 12C4. If specimen 12E3 were to be considered more desirable

because it was read more quickly than any other specimen the rank of speed and comprehension combined shows that material set according to this specimen might be a little more difficult of comprehension than material set according to specimen 1204. The table shows that the most desirable specimens with respect to rank in speed are the cheapest to print. The ranking according to speed and comprehension combined also shows that the most desirable specimens are the cheapest to use in book form. The correlations, according to the Foot-Rule method, between area and speed of reading and between area and the combination of speed and comprehension were found to be, respectively, .51 and .38. These "amazing" correlations led Buckingham to say (1931, 13:122)

> When, however, considerations of economy actually enforce those of readability; when, in short, there is a tendency for the most readable type likewise to be the most economical in manufacturing, then the case seems to be closed. The two great factors of readability and cost are not in opposition but are in reality in alliance.

While this study is the most comprehensive and acceptable for second grade undertaken so far, further evidence seems desirable to confirm the findings relative to the legibility of the specimens used.

Summary and Conclusions

1. Until further evidence is offered the recommendations of Bamberger, pertaining to the "physical makeup" of books, should serve as tentative standards.

2. Authorities are apparently in complete agreement that white, unglazed paper is the best for textbooks. Black ink should be used to provide the greatest contrast.

3. The fact that lower case letters are found to be more legible than all capitals or all italics may be due to the practice effect of usually reading matter set in lower case type. An examination of italics shows it has a tendency to be more elaborate, with thin lines more in evidence than in lower case letters.

The less ornate type faces have proved to be more legible. In the plainer styles the optimum heaviness of face seems to lie between the bold and the light face with specific recommendations that no vertical stroke should be less than .25 millimeters in thickness.

4. The studies summarized offer no adequate evidence upon which to base specific recommendations concerning the amount of leading. Recommended standards either lack sufficient experimental evidence or are impractical. In addition it is scientifically impossible to designate a specific size of leading that will produce the greatest degree of legibility with all type sizes and line lengths.

The only definite conclusion that can be made is that type set with some leading is more legible than type set solid.

5. Much conflicting evidence is offered in studies pertaining to size of type. Two studies of undoubted authority find that legibility is little affected by decided changes in size of type. Apparently fatigue does not enter as a factor in either of the studies. The assumption may be that the amount of fatigue is inversely proportional to the degree of legibility. On the other hand fatigue may be assumed to be entirely unrelated to legibility. In either case the assumption would not be true. Subjects, keyed up and stimulated beyond normal, consciously or unconsciously, to meet the experimental conditions would extend themselves to make favorable records. The records would show little difference in "readability" of the specimens but would not show the varying amounts of fatigue produced by forcing the eye-muscles to unusual accomodations. Perhaps a more accurate conclusion would be that the human eye is capable of making such unusual accomodations to great changes in sensory stimuli for short periods of time, that but slight differences can be detected in case of legibility.

Shaw's standards of type size for primary grades are, in general, apparently approximated in school books. Whether this has resulted as an accident, or as a positive effort on the part of publishing houses to take into consideration standards advocated by educators, the fact remains that there is no substantial experimental proof that these recommendations are optimum. In contrast to the common recommendations that type should be eighteen or fourteen-point for second grade, Buckingham's study shows that twelve-point is the most legible. There is need for further evidence that the type sizes in use in the primary grades are the most desirable.

6. The majority of experimental evidence favors a line with a maximum length of 90 millimeters.

7. Buckingham's study is noteworthy for two reasons. First, it takes into consideration specifications that are fully understood and reproducible by the printer. Second, it offers cost of production in addition to degree of legibility as a new measure of the desirability of a type page.

CHAPTER VI

FINDINGS OF THE QUESTIONNAIRE

The Use of Questionnaire

The conclusions reached in chapters two, three, and four, were based on the sum total of results of many unrelated experiments. Some of these were authoritative enough to warrant the introduction of new ideas or developments in the use of primary materials. Others, while presenting proved facts, failed to show how these facts could be fully used in improving reading materials. The writer felt that teachers could supply much data that would help to make the final conclusions more reliable. It also seemed desirable to get information that could only be supplied by the teacher and the questionnaire offered the most reasonable method. Quite often an unsatisfactory way of gathering data, the questionnaire in this case afforded an opportunity of adding the personal reactions of teachers to those conclusions found in a more scientific way. The questionnaire did not ask for information on the problem of format and hygienic requirements presented in Chapter V because of the inadequacy of opinions on the subject. It was confined to questions pertaining to content of readers, difficulty of material, and reading interests. It was used as a means to verify or extend the tentative chapter conclusions.

The particulars of handling the questionnaire were discussed in

Chapter I. The response was good considering that no follow-up was used. Three evaluated questionnaires were not used because of inadequate responses. The writer thought it might be possible to detect variations or trends of opinion between teachers who had taught less and more than ten years. It was not possible to do this because with few exceptions all teachers had more than ten years of teaching experience. The average number of years of teaching experience for 139 teachers, the remaining 11 not giving this information, was approximately 16 years. The following table contains the frequency by city, school, and grade, of the evaluated questionnaires. The variety of sources indicates that a fair and honest sampling was secured.

Table XXVIII

Sources and Number of Responses to Questionnaires

City	Frequency of Responses				
	Grade I	Grade II	Grade III	Schools	Teachers
Chicago, Ill.	32	22	22	20	76
Minneapolis, Minn.	12	12	12	12	36
Peoria, Ill.	5	5	6	10	16
Los Angeles, Calif.	3	5	2	6	10
Toledo, Ohio	1	1	0	1	2
Huntingdon, Penn.	2	3	2	2	7
Carbondale, Ill.	2	1	0	3	3
Totals	57	49	44	54	150

It will be noted that in the tables used in the following discussion, responses, with the exception of the answers to a few questions, were divided into two groups; those from Chicago and those from outside of

Chicago. In instances where there is no decided variation between the groups reference will be made only to the percentage table containing the responses from allof the cities.

Contents of Readers*

Material which is well-written, of proper difficulty, and interesting, regardless of whether it can be called "good literature" is desirable. In Table XXXII, column 11, the total "Yes" vote is 93 per cent. In Grade III, column 8, the "Yes" vote is 89 per cent. This is the lowest of the three grades but high enough to practically show agreement on the question of the desirability of well-written material.

Responses to question 2, pertaining to the inclusion of more informational material, show some interesting variations. In Table XXX, consisting of responses of teachers in cities outside of Chicago, most of the responses of grade one favor the inclusion of more informational material while for grade three the responses indicate as many for as against the inclusion of more informational material. This condition is reversed in Chicago (Table XXIX). The number of responses in grade one are evenly divided between the "NO" and "YES" column with respect to the inclusion of more factual material. In grade three two-thirds of the teachers are in favor of the inclusion of more informational selections. In Table XXXII the percentages show that in each grade more teachers are in favor of the inclusion of more informational material than are against its inclusion. The total percentages show 57 per cent for, 31 per cent against, and 12 per cent undecided about the inclusion of more informational

*The questions used appear on the three following pages.

selections. It would be safe to conclude that a decided need is felt for more factual material.

Apparently there is not too much poetry in primary reading books according to Teachers' opinions. Question 3, pertaining to the amount of poetry in books shows a consistent rating in all grades and schools. Table XXXII shows that 88 per cent of the teachers agree that there is not too much poetry.

In response to question 4 as to whether children like poetry, Chicago teachers are a little more inclined to say that children do not like it than are teachers in other cities. However, the difference is small with no decided variations in any grade. Table XXXII shows that 78 per cent of all teachers say that children like poetry.

The responses of teachers concerning too much duplication of selections in readers (question 5) show that a majority of the teachers are not of the same opinion. With the exception of two grades, more teachers say there is not too much duplication. The exceptions are grade one outside of Chicago and grade three in Chicago. Table XXIX and Table XXX show that the responses in these two grades are approximately equal. The percentage of total responses in Table XXXII show that 38 per cent of the teachers say there is too much duplication, 54 per cent say there is not too much, while 7 per cent are undecided. The question does not inquire as to whether there is duplication but whether there is <u>too much</u> duplication. The answers show that there must be considerable duplication.

Questions 6a and 6b proved to be the most difficult of the entire list. Table XXXII, column 14, shows that 6a had a total unanswered per-

centage of 17 while 6b had that of 20. In all grades, both in and out of Chicago, with the exception of one, the majority of teachers expressing an opinion voted "No" on the question as to whether mental attitude of the pupil toward a given book was affected by his coming in contact with duplicated selections. The exception was grade three in Chicago. In this grade the majority of teachers was of the opinion that duplication did affect the mental attitude of the pupil. The percentage table shows that in all grades in all cities 43 per cent of the teachers said duplication did not affect the mental attitude of a child toward a given book, 29 per cent said it did, while 11 per cent were unable to decide. Seventeen per cent as stated previously made no response. The results indicate that quite a number of children are mentally affected by duplication. This effect would most likely be thought of as detrimental to the best interests of the child, that is, the effect would be to lessen the interest in the book. Discussions pertaining to the effect of duplication on the interests of the child uphold this viewpoint. Contrary to this generally accepted theory two teachers in addition to checking "Yes" wrote in the word "good," indicating that the effect of duplication was good rather than bad. In general, however, there is reason to believe that the 29 per cent "Yes" response was intended to indicate a bad rather than a good effect.

In Question 6b, which considers the difficulty of class procedure in relation to the problem of duplication, much the same results were obtained as in 6a. With the exception of one grade, responses indicated that more teachers feel that duplication does not increase the difficulty of class procedures. Table XXIX, columns 8,9, and 10, shows the one exception,

grade three in Chicago, to be equally divided between the "Yes" and the "No" answers. Table XXXII shows that 21 per cent of the teachers believe that duplication increases the difficulty, 45 per cent believe that it does not, while 14 per cent areundecided. It is evident that some difficulty in classroom procedure is encountered because of duplication.

Responses to question 5, on the amount of duplication, were also tabulated to show a comparison to responses on question 7, pertaining to the number of sets of books used and the number of publishers from whom they were bought. This same comparison was made with the responses from question 12 which was concerned with the problem of a common vocabulary content in supplementary readers. Table XXXIII contains the responses for question 7 and the continued part of Table XXXIII (page 126) contains the responses taken from the same check lists as the responses on question 7, of questions 5 and 12. As 107 teachers responded to question7, questions 5 and 12 have a like number of responses in this new table. In making this comparison it was thought that the problem of duplication and common word vocabulary might show some correlation with the number of publishers. The comparison obtained in the continued section of Table XXXIII shows no such trend. As one reads down from the top of the table to the bottom the number of publishers increases as wellas the number of sets of books but there is no trend in responses from the "No" column to the "Yes." In other words, while the duplication and the common word vocabulary problems are naturally quitelikely to increase with thenumberof publishers, the teachers responses do not indicate such a trend.

Table XXIX

The Frequency of Responses for Teachers in Grades One, Two, and Three, in Chicago

Questions	Grade I			Grade II			Grade III			Total		
	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Und.
1	2	3	4	5	6	7	8	9	10	11	12	13
1	29	2	1	22	0	0	19	2	1	70	4	2
2	14	13	5	13	5	4	15	5	2	42	23	11
3	1	30	1	4	18	0	4	17	2	9	64	3
4	25	6	1	15	5	2	13	5	2	53	16	5
5	10	21	0	9	10	2	10	10	2	29	41	4
6a	9	13	3	6	10	3	10	8	1	25	31	7
6b	7	13	3	5	10	4	8	8	2	20	31	9
9	7	14	8	5	11	5	10	6	7	22	31	20
10	13	6	9	9	4	5	10	2	9	32	12	23
11	20	10	1	16	6	0	11	10	1	47	26	2
12	18	13	1	10	11	1	13	9	0	41	33	2
13	29	2	1	19	2	1	22	0	0	70	4	2
14a	28	1	1	19	0	0	20	2	0	67	3	1
14b	21	5	3	12	9	0	18	3	1	51	17	4
14c	4	22	2	2	14	3	3	17	2	9	54	7
15	16	14	0	16	5	0	13	9	0	45	28	0
15a	4	12	0	6	10	0	3	10	0	13	32	0
15b	11	5	0	8	8	0	6	4	0	25	20	0
15c	9	7	0	6	10	0	7	6	0	22	23	0
16	8	16	5	7	13	1	10	11	1	25	40	7
17	8	21	3	8	12	1	9	12	1	25	45	5
17a	4	2	2	6	2	0	4	3	2	13	7	5
17b	8	0	0	6	1	1	9	0	0	23	1	1
18	30	1	1	21	0	0	18	1	3	69	2	4

*Undecided

Table XIX

The Frequency of Responses for Teachers in Grades One, Two, and Three, Outside of Chicago

Questions	Grade I			Grade II			Grade III			Total		
	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Und.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1	25	0	0	25	1	1	20	1	1	70	2	2
2	14	8	3	19	5	3	11	10	1	44	23	7
3	0	24	0	2	23	1	0	20	1	2	67	2
4	20	3	2	24	2	1	20	9	0	64	5	5
5	13	11	1	7	17	3	7	12	3	27	40	7
6a	7	11	4	5	13	4	6	9	2	18	33	10
6b	6	11	4	1	15	6	4	11	2	11	37	12
9	6	12	7	3	18	5	6	7	8	15	37	20
10	20	1	4	12	4	9	11	2	8	43	7	21
11	20	5	0	13	9	5	12	9	1	45	23	6
12	14	4	6	14	9	4	12	7	2	40	20	12
13	25	0	0	27	0	0	19	2	1	71	2	1
14a	24	0	1	26	0	0	22	0	0	73	0	1
14b	12	9	4	21	5	1	10	5	7	43	19	12
14c	1	24	0	0	26	1	0	21	1	1	71	2
15	19	6	0	15	12	0	7	15	0	41	33	0
15a	15	4	0	13	2	0	3	4	0	31	10	0
15b	19	0	0	12	3	0	4	3	0	35	6	0
15c	18	1	0	11	4	0	5	2	0	34	7	0
16	12	9	4	9	11	7	5	12	3	26	32	14
17	9	13	3	10	15	2	8	10	3	27	38	9
17a	4	2	3	6	2	2	3	3	2	13	7	7
17b	7	1	1	9	0	1	4	0	4	20	1	6
18	25	0	0	27	0	0	22	0	0	74	0	0

*Undecided

Table XXXI

The Frequency of Responses for Teachers in Grades One, Two, and Three in All Cities Studied

Question	Grade I			Grade II			Grade III			Total			
	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Unde.*	Una.[1]
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	54	2	1	47	1	1	39	3	2	140	6	4	0
2	28	21	8	32	10	7	26	15	3	86	46	18	0
3	1	54	1	6	41	1	4	37	3	11	131	5	3
4	45	9	3	39	7	3	33	5	4	117	21	10	2
5	23	33	1	16	27	5	17	22	5	56	81	11	2
6a	16	24	7	11	23	7	16	17	3	43	64	17	26
6b	13	24	7	6	25	10	12	19	4	31	68	21	30
9	13	26	15	8	29	10	16	13	15	37	68	40	5
10	33	7	13	21	8	14	21	4	17	75	19	44	12
11	40	15	1	29	15	5	23	19	2	92	49	8	1
12	32	17	7	24	20	5	25	16	2	81	53	14	2
13	54	2	1	46	2	1	41	2	1	141	6	3	0
14a	52	1	2	46	0	0	42	2	0	140	3	2	5
14b	33	14	7	33	14	1	28	8	8	94	36	16	4
14c	5	46	2	2	40	4	3	38	3	10	124	9	7
15	35	20	0	31	17	0	20	24	0	86	61	0	3
15a	19	16	0	19	12	0	6	14	0	44	42	0	0
15b	30	5	0	20	11	0	10	10	0	60	26	0	0
15c	27	8	0	17	14	0	12	8	0	56	30	0	0
16	20	25	9	16	24	8	15	23	4	51	72	21	6
17	17	34	6	18	27	3	17	22	4	52	83	13	2
17a	8	4	5	12	4	2	7	6	4	26	14	12	0
17b	15	1	1	15	1	2	13	0	4	43	2	7	0
18	55	1	1	48	0	0	40	1	3	143	2	4	1

*Undecided

1. Unanswered: Number of times question was unanswered.

Table XXXII

The Percentage of Responses for Teachers in Grades One, Two, and Three in All Cities Studied *

Question	Grade I			Grade II			Grade III			Total			
	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Unde.	Yes	No	Unde.[1]	Una.[2]
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	95	3	2	96	2	2	89	7	4	93	4	3	0
2	49	37	14	66	20	14	59	34	7	57	31	12	0
3	2	95	2	12	84	2	9	84	7	7	88	3	2
4	79	16	5	80	14	6	75	11	9	78	14	7	1
5	40	58	2	33	55	10	39	50	11	38	54	7	1
6a	28	42	12	22	47	14	36	39	7	29	43	11	17
6b	23	42	12	12	51	20	28	43	9	21	45	14	20
9	23	46	26	16	59	20	36	30	34	25	45	27	3
10	58	12	23	42	16	29	48	9	39	50	13	29	8
11	70	26	2	59	31	10	52	43	5	61	33	5	1
12	56	30	12	49	41	10	57	36	5	54	36	9	1
13	95	3	2	94	4	2	93	5	2	94	4	2	0
14a	91	2	4	94	0	0	95	5	0	93	2	2	3
14b	58	25	12	67	29	2	64	18	18	63	24	11	2
14c	9	80	4	4	82	8	7	86	7	7	83	6	4
15[3]	61	35	0	63	35	0	45	55	0	57	41	0	2
15a	54	46	0	61	39	0	30	70	0	51	49	0	0
15b	86	14	0	65	35	0	50	50	0	70	30	0	0
15c	77	23	0	55	45	0	60	40	0	65	35	0	0
16	35	44	16	33	49	16	34	52	9	34	48	14	4
17[3]	30	60	10	37	55	6	39	50	9	35	55	9	1
17a	47	24	29	66	23	11	41	35	24	50	27	23	0
17b	88	6	6	83	56	11	76	0	24	83	4	13	0
18	96	2	2	98	0	0	91	2	7	95	1	3	1

* The percentages for Grades One, Two, and Three were respectively based on a total response of 57, 49, and 44. Percentages in the Total column were based on a total of 150 responses.

1 Undecided

2 Unanswered

3 The Percentages in the a, b, and c answers were based on the Yes answers only of questions 15 and 17

Table XXXIII

The Frequency of Responses Pertaining to Books Used from More Than One Publisher, Amount of Duplication of Selections, and Amount of Common Word Vocabulary in Grades One, Two, and Three in All Cities Studied

Number of Sets of Books	Number of Publishers												
	2	3	4	5	6	7	8	9	10	11	12	16	18
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	4	0	1	0	0	0	0	0	0	0	0	0	0
3	0	6	1	0	0	0	0	0	0	0	0	0	0
4	0	2	5	0	0	0	0	0	0	0	0	0	0
5	1	5	3	1	1	0	0	0	0	0	0	0	0
6	0	3	2	2	9	0	1	0	0	0	0	0	0
7	0	2	1	2	0	0	0	0	0	0	0	0	0
8	0	1	3	2	4	0	5	0	0	0	0	0	0
9	0	0	1	1	0	2	0	1	0	0	0	0	0
10	0	0	0	3	2	3	1	0	0	0	0	0	0
11	0	0	0	0	0	1	0	0	1	0	0	0	0
12	0	0	1	0	0	1	2	2	1	0	1	0	0
15	0	0	0	0	0	0	1	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	1	1	0
17	0	0	0	0	0	0	0	1	0	0	0	0	0
18	0	0	0	0	0	0	0	0	1	0	0	0	0
21	0	0	0	0	0	0	0	0	0	1	0	0	0
22	0	0	0	0	0	0	0	0	0	1	0	1	0
24	0	0	0	0	0	0	0	0	0	2	0	0	0
25	0	0	0	1	1	0	0	0	0	0	0	0	1
35	0	0	0	0	0	0	0	1	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	2	0
Totals	5	19	18	12	17	7	10	5	3	4	2	4	1

Table XXXIII

Continued

Number of Sets of Books	Question 5: Is there too much duplication of selections?			Question 12: Does lack of common word vocabulary cause difficulty in word mastery?		
	Yes	No	Undecided	Yes	No	Undecided
15	16	17	18	19	20	21
2	1	3	1	3	2	0
3	4	3	0	6	0	1
4	4	3	0	6	1	0
5	6	4	1	6	5	0
6	3	11	3	7	5	5
7	3	2	0	4	1	0
8	8	6	1	6	6	3
9	3	2	0	3	2	0
10	4	5	0	5	4	0
11	0	1	1	2	0	0
12	2	6	0	4	2	2
15	0	1	0	0	0	1
16	1	1	0	1	1	0
17	1	0	0	0	0	1
18	0	1	0	0	1	0
21	0	1	0	1	0	0
22	1	1	0	1	1	0
24	0	2	0	0	2	0
25	0	3	0	3	0	0
35	1	0	0	1	0	0
36	0	2	0	2	0	0
Totals	42	58	7	61	33	13
Per Cents	39.2	54.2	6.5	57.0	30.8	12.1

The first part of Table XXXIII, containing the responses to question 7, shows a wide variation in the number of sets of books used and in the number of publishers from whom they were bought. Nineteen of the teachers use sets of books that have been bought from three publishers, eighteen

Table XXXIV

The Frequency of Responses Pertaining to the Relative Value of Types of Material for Grade I

Types of Material	Relative Values			
	Great Value	Good Value	Doubtful Value	Neg. Value
1	2	3	4	5
Animals	47	8	1	1*
Fables	4	14	26	10
Mother Goose	18	19	11	6
Fairy Tales	18	24	15	0
Geography	5	8	14	22
Health	15	26	12	1
Nature	22	21	9	2
Kindness	25	22	7	1
Bravery	18	21	13	3
Affection	17	20	15	3
Duty	16	16	14	9
History	1	15	14	22
Honesty	20	23	7	4
Politeness	21	21	6	4
Industry	12	21	10	9
Civics	9	17	15	13
Folk Tales	9	21	12	3
Science	9	16	15	20
Humor	17	23	9	3
Home Life	48	5	1	2
Child Life	52	2	1	2
Interesting Characters	37	17	4	5

* Totals vary as all teachers failed to evaluate all types.

use sets of books from four publishers, and seventeen from six publishers. The range in the number of publishers is great. Five teachers use books from one publisher and one teacher uses books from eighteen publishers. The mid-point of the distribution is approximately six publishers.

Reading interests of primary pupils are varied and so textbooks should contain many types of material. Question 8 included the types which were used in the reviewed studies about the content of readers. The writer made no attempt to differentiate between types which emphasize only subject matter and those which are predominately descritive of how the subject matter may be treated. It was felt that such a distinction was not within the scopeof this study as there is not a single instance where this differentiation is made in research studies. For instance, Gates (Table III, p.15) includes poems and stories as types of material along with folk tales, animals, Mother Goose, etc. Whether "bravery" should be considered a "type," a "factor" or listed under some other term denoting quality is not of concern in this study. Each "type" expresses the nature of the predominating characteristic of a given selection.

In the first five types consisting of animals, fables, Mother Goose, fairy tales, and geography, contained in TablesXXXIV, XXXV, and XXXVI, "Fables" is the only type which has a consistent rating tending to make it of doubtful value. "Geography" shows an interesting movement in rating. In first grade the majority of teachers deem it out of place. In second grade its value increases while in third grade it is rated as decidedly valuable. In the second group of five types consisting of health, nature, kindness, bravery, and affection, ratings show a consistent trend toward the valuable side of the scale. The remaining types are rated much the same with the exception of history, civics, and science. These three types are rated as being more valuable in grades two and three than in grade one. Geography, previously mentioned, showed the same tendency.

Table XXXV

The Frequency of Responses Pertaining to the Relative Value of Types of Material in Grade II

Types of Material	Relative Values			
	Great Value	Good Value	Doubtful Value	Neg. Value
1	2	3	4	5
Animals	37	11	1	0*
Fables	7	12	20	6
Mother Goose	22	17	8	3
Fairy Tales	23	19	5	2
Geography	4	12	18	8
Health	19	23	3	9
Nature	22	19	5	0
Kindness	23	22	1	0
Bravery	23	19	5	0
Affection	20	20	5	2
Duty	19	15	9	4
History	6	15	16	7
Honesty	23	17	5	0
Politeness	22	21	3	0
Industry	13	17	8	4
Civics	11	21	9	6
Folk Tales	18	15	12	2
Science	9	21	7	5
Humor	27	16	3	0
Home Life	37	10	0	0
Child Life	38	10	0	0
Interesting Characters	31	14	0	0

*Totals vary as all teachers failed to evaluate all types.

The types rating the highest in all grades are animals, health, nature, kindness, bravery, honesty, politeness, humor, home life, child life, and interestingcharacters.

Table XXXVI

TheFrequency of Responses Pertaining to the Relative Value of Types of Material for Grade III

Types of Material	Relative Values			
	Great Value	Good Value	Doubtful Value	Neg. Value
1	2	3	4	5
Animals	39	4	1	0*
Fables	8	18	12	5
Mother Goose	12	17	7	4
Fairy Tales	25	13	4	1
Geography	10	15	9	7
Health	19	15	7	0
Nature	20	17	5	0
Kindness	28	10	3	1
Bravery	25	13	4	0
Affection	16	16	8	2
Duty	23	7	9	3
History	5	15	10	12
Honesty	29	10	3	1
Politeness	25	15	4	1
Industry	14	15	8	6
Civics	9	9	12	10
Folk Tales	9	20	11	1
Science	7	12	16	8
Humor	21	14	8	0
Home Life	25	14	2	1
Child Life	31	9	2	0
Interesting characters	23	12	7	1

* Totals vary as all teachers failed to evaluate all types.

Table XXXVII

The Frequency of Responses for Types of Material Which Have Too Many or Too Few Selections Written About Them

Type of Material	Grade I		Grade II		Grade III		Total*	
	Too Many	Too Few	Too Many	Too Few	Too Many	Too Few	Too Many	Too Few
1	2	3	4	5	6	7	8	9
Humor	0	7	0	8	0	6	0	21
Nature	0	6	0	4	1	4	1	14
Animals	2	1	1	2	6	0	9	4
Child Life	1	3	0	0	1	7	2	10
True to Fact	2	4	1	2	1	1	4	7
Health	0	5	0	3	1	1	1	10
Science	0	5	0	3	0	1	0	9
Fables	3	0	2	0	4	0	9	0
Geography	0	0	0	5	0	3	0	8
Home Life	1	4	0	0	1	2	2	6
Fairy Tales	1	0	3	2	2	0	6	2
Folk Tales	3	1	2	1	0	1	5	3
Bravery	0	3	0	1	0	3	0	7
Kindness	0	5	0	0	0	2	0	7
Mother Goose & Nursery	4	0	1	0	1	0	6	0
Imaginative	0	2	0	2	0	1	0	5
Duty	0	3	0	0	1	1	1	4
Politeness	0	3	0	0	0	1	0	4
Civics	0	0	1	1	0	2	1	3
Interesting characters	0	1	0	2	0	1	0	4
Community Life	0	2	0	1	0	1	0	4
Real Life, Plays, & Stories	0	2	0	0	0	2	0	4

*"Too Many," 25 per cent of teachers responded. "Too Few," 50 per cent.

Geography, history, civics, and science, are rated more valuable in grades two and three. The remaining seven types are rated with enough value to warrant their inclusion in limited numbers to provide a wider variety of reading materials.

Table XXXII, column 11, shows that 25 per cent of the teachers answer "Yes" to question 9. They believe that too many selections are written about certain types of material. Answers to question 10 show that 50 per cent of the teachers are in favor of having more selections written about certain types of material. Table XXXVII shows the results of the responses to these two questions. Types which did not have a total of four votes are not included in the table. As may be noted, in the majority of cases the same type is considered as having too many as well as too few selections written about it. The total answers to question 9, in column 8, show fables and Mother Goose and nursery as two types about which too many selections have been written. These are the only types which do not also have some votes in their favor. A comparison of the total columns of 8 and 9 shows that animals, fairy tales, and folk tales, receive more votes indicating too many selections than they did votes indicating too few. The answers to question 10 in column 9, show humor, nature, health, science, geography, bravery and kindness to be the outstanding types of all mentioned which should have more selections written about them. Perhaps the outstanding type of all is humor, with its 21 votes in favor and none against the inclusion of more such material in reading books.

A comparison of the findings of questions 9 and 10 with those of question 8 indicate some interesting conditions which may be true about

reading materials. There are several comparisons which should be noted. Table XXXVII shows that animals which ranked high in value in all grades has too many selections written about it. Because of the high interest value of animals as a subject for selections, authors have apparently emphasized that type of material too much. Science and geography which were rated as only moderately valuable in question 8 appear in need of more emphasis in answers to questions 9 and 10. This comparison indicates that some types of material may be extremely interesting to pupils and yet contain too many selections. On the other hand less interesting types should receive their proper emphasis.

Difficulty of Materials

A majority of the teachers are of the opinion that new words are introduced at too rapid a rate for proper mastery. The responses to question 11 in Table XXXII, column 11, 12 and 13, show that 61 per cent believe words are introduced too rapidly, that is, there is not enough meaningful repetition in content, 33 per cent believe that words are not introduced too rapidly while 5 per cent are undecided. It is safe to conclude on the basis of these percentages that textbook writers could give more attention to the prevention of too rapid an introduction of new words. A great many teachers apparently feel the need for more meaningful repetition of words.

Question 12 shows approximately the same percentage of affirmative responses as question 11. The majority of teachers believe that lack of a sufficiently large common vocabulary in the different sets of readers used

causes difficulty in word mastery. Table XXXII shows that 54 per cent of the teachers are of this opinion. It is evident that many teachers believe that careshould be taken in choosing supplementary readers so as to insure as large a common vocabulary as possible. The data indicate that the problem of a common vocabulary for readers of equal difficulty is largely unsolved.

Question 13 was used as a check on responses of the two previous questions. A legitimate evaluation on question 11 and 12 could not be obtained unless question 13 received an affirmative response. Ninety four per cent of the teachers believe that meaningful repetition of words in context is a prerequisite for word mastery.

The answers to question 14 indicatethat the number of meaningful repetitions is enough for the bright pupil, is probably enough for the average pupils, but is not sufficient for the dull pupil. The percentage table (Table XXXII) shows that 93 per cent of the teachers say there is enough repetition for the bright pupil, while 83 per cent agree that there is not enough for the dull pupil. In the case of the average pupil 63 per cent agree there is enough repetition, 24 per cent say there is not enough repetition, while 11 per cent are undecided. In general the data indicate that unless an effort is made to differentiate the appropriateness of reading books, in relation to meaningful repetitions, on the basis of the pupil's native endowment more meaningful repetitions will have to be supplied for the lower average and dull pupils to insure their success in reading.

In answer to question 15, 57 per cent of the teachers say they have been required to evaluate or choose textbooks in reading. A discussion as

to whether this percentage is too small or too largeis not within the scope of this study. The responses areused to evaluabe a,b, and c, under 15.

The use of duplication, common word and word recurrence frequency tables as devices for helping to evaluate reading books is discussed in chapters two and three. In questions 15a, b and c, an effort is made to see whether such tables are commonly used in textbook evaluation. Table XXXII, column 11, shows that when textbooks are evaluated duplication of selection tables are used 51 per cent of the time, word recurrence or meaningful repetition in context tables are used 70 per cent of the time and common word (words common to more than one book) vocabulary tables are used 65 per cent of the time. As published frequency tables are limited in number it seems logical to assume that many had to be made for the various evaluations. Another condition which points to the need for the production of many such tables, if the percentagelisted above indicates the true prevalence of their use, is that while one of the three tables for any given set of books might be available it seems most improbable that allthree would be. The production of such a table involves a great deal of labor and time. Unless the evaluation of a textbook were planned well in advance therewould not be time to wait for the production for such a table or tables. The evaluation of only several textbooks, such as an individual class teacher might be expected to make would not warrant the making of an extremely laborious table. In committee work where many volumes may be under consideration the production of frequency tables may be warranted but lack of time and workers makes it necessary to proceed with the evaluation without the tables. Owing to the limited numberof frequency tables appearing in print and to

the necessity for an evaluation of a wide range of textbooks as indicated by responses to question 7, it seems likely that the percentage of 51, 70, and 65, denoting the frequency of use of duplication, word recurrence, and common word tables, respectively, are relatively large.

An examination of Table XXIX and Table XXX shows an interesting situation. A comparison of columns 11 and 12 of each table shows that in cities outside of Chicago practically all teachers who evaluate textbooks use all three tables, while in Chicago only one-half of the teachers who evaluate textbooks use all tables. While it would be interesting to know the reason for this difference a further study of this particular situation would be needed as the data offer no possible explanation.

Reading Interests

In answer to question 16 teachers are of the opinion that informational selections are not liked quite as well as the purely imaginative. Table XXXII shows that 34 per cent of all teachers say factual material is liked as well as fiction, 48 per cent say it is not, and 14 per cent are undecided. It would be safe to conclude that the data show that factual material can be and often is of interest to pupils.

Responses to question 17 show that the majority of teachers believe that grade placement of materials is on the whole satisfactory. The percentage table, columns 12, 11, and 13, shows that 35 per cent of the teachers find selections out of place in the grade in which they are taught, 55 per cent find grade placement satisfactory, while 9 per cent are undecided. The proper grade placement in one community would not be entirely

satisfactory in another. This unstable condition would be evident in the same room where from semester to semester changing pupils would throw out of balance a perfectly graded body of material. However, the data seem to indicate that considerable attention should be given to the lack of proper grade placement of many selections.

Answers to questions a and b under 17 indicate that improper grade placement is due more often to lack of interest in a selection than to difficulty. In response to the question as to whether difficulty causes selections to be out of place in the grade in which they are taught 50 per cent of the teachers who said that selections are out of place agree that difficulty is one cause, 27 per cent say no, and 23 per cent are undecided. In answer to whether lack of interest is a factor causing improper grade placement 83 per cent believe it is, 4 per cent believe it is not, while 13 per cent are undecided. The data warrant the conclusion that lackof interest in a selection is the chief reason for its being out of place in the grade in which it is taught, while lack of proper difficulty is also an important factor.

Teachers are in agreement as to the necessity for taking into consideration children's reactions as to difficulty and interest in the selection and organization of materials of reading. The responses in Table XXXII show that 95 per cent of the teachers subscribe to that viewpoint.

Summary and Conclusions

1. Material that is well-written, of proper difficulty, and interesting other than so-called "good literature" is desirable.

2. It seems desirable that more informational material be added to primary reading books.

3. Primary books do not contain too much poetry.

4. Poetry is liked by the children.

5. There is evidently considerable duplication of selections although the majority of teachers think there is not too much.

6a. Duplication in many instances affects the mental attitude of the pupil toward reading a particular book. In some few cases the influence appears to be good but in general it is detrimental to developing interests in reading. Experimental evidence of the effect of reading duplicated selections is needed.

6b. Some teachers agree that duplication increases the difficulty of class procedure. Approximately one-fourth of the group responding in the questionnaire is of this opinion. Duplication should be eliminated as the sum total of its effect is detrimental.

7. Thereis a large variation in the number of sets of books used. The number of publishers from whom books were bought also varies widely. The number of sets of books most commonly used are six, used seventeen times, and eight, used fifteen times. The mid-point of the distribution of publishers is approximately six. Sets of books in use vary in number from two to thirty-six while publishers from whom these books were bought

vary in number from two to eighteen.

8. Types of material receiving the highest evaluation in all grades are:

animals	honesty
health	politeness
nature	humor
kindness	home life
bravery	child life
	interesting characters

Types of material of less value are:

fables	affection
Mother Goose	duty
fairy tales	industry
	folk tales

Types of material that seem to be of more value in grades two and three in grade one are:

geography	history
science	civics

One may conclude that a well-balanced group of materials according to this evaluation should consist largely of the eleven types listed in the highest value group with an intermixture of a more limited number of the seven less valuable types and with an increasing but limited use of geography, science, history, and civics, from grade one to three.

9. Types of material in which too many selections are written are:

fables	animals
Mother Goose	fairy tales
	folk tales

10. Types of material in which more selections should be written are:

humor	science
nature	geography
health	bravery
	kindness

11 and 14. In general there should be more meaningful repetitionof words in the context to insure mastery. A too rapid introduction of new words prevents proper vocabulary growth. However, this is not true of the bright or average pupil, but unless provision is made for supplying books differentiated on the basis of the slow and fast learner, the necessity of meeting the need of the slowest group requires that more meaningful repetitions be supplied in reading books.

12. It is necessary that there be a sufficiently large vocabulary common to the various readers used. The introductionof too many new words in the supplementary reader prevents word mastery.

13. Meaningful repetitions of words in context are prerequisite for ease of word mastery.

15. The data show that the majority of teachers who evalunbe reading textbooks use tables pertaining to duplication of selections, word recurrence, and common word vocabulary.

16. Informational selections do not appear to be liked by pupils as often as imaginative selections. However, factual material can be and often is as interesting to pupils as imaginative.

17a and b. There is need for further evaluation of reading materials in order to insure selections being placed in the grade in which they arouse the most interest and provide the proper amount of difficulty.

18. Children's reactions as to difficulty and interest should serve as a factor of evaluation in the selection and organization of reading materials.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this thesis was to discover what characteristics should be embodied in the textbook materials of primary reading in order to best prevent the development of reading disabilities.

The data were obtained from a review of studies published after 1925 and the writer's questionnaire study. The yearly publications of William S. Gray's Summary of Reading Investigations were used as the main bibliographical sources. References were also obtained from bibliographies contained in individual studies and from the Readers Guide to Periodical Literature and The Education Index. The studies were organized and discussed under the main divisions of content of readers, difficulty of material, reading interests, and hygienic requirements. A questionnaire or check list was then drawn up to include all of the important points developed in the review of the literature in chapters two, three and four. The questionnaire was printed, tried out, and sent to approximately 350 teachers for evaluation. No follow-up was used because of the possibility of lowering the reliability of the responses. The responses of the 150 usable questionnaire returned are tabulated and discussed in Chapter VI.

Conclusions

The data support the following conclusions:

1. Desirable materials of reading do not need to be classified as

"good literature." It is of more importance that they be well-written, of proper difficulty and interesting. Such a standard for materials will provide a wider range of selections and reduce the difficulty of the appreciation of literary quality by beginners.

2. There is considerable evidence of the predominating use of imaginative material with a consequent lack of emphasis on the factual. More factual material seems to be needed. Research studies and the opinions of teachers agree that factual material can be and often is as interesting to pupils as imaginative material. Factual material provides a wide range of reading experiences in fields of human endeavor that are most important. It offers an efficient presentation of materials for the assimilation of facts. In conjunction with imaginative material it provides a rich and varied experience in reading and is easily motivated.

3. Tabular studies show that poetry is a prominent form of presentation. Discussions presented in several research studies indicate a tendency to believe that primary books contain too much poetry and that children do not like it. It is true that children dislike certain poems but not all poems. There is no evidence as to the percentage of poetry which offers a good balance of selections. Teachers are decidedly of the opinion that there is not too much poetry and that children like poetry.

4. There is need for a wide range in types of reading selections. The term"type" as commonly used denotes the predominating characteristic of a given selection. Certain types are used more often than others. Research studies show that some types are more interesting than others. The evaluation by teachers tended to show some types more valuable than others.

The value of the type is based on the factors of interest, and information and training that are essential for a primary pupil.

The most valuable types are:

animals	honesty
health	politeness
nature	humor
kindness	home life
	child life
	interesting characters

The least valuable types are:

fables	affection
Mother Goose	duty
fairy tales	industry
	folk tales

Types which become more valuable in grades two and three than in grade one are:

geography	history
science	civics

It is possible to throw out of balance the various amounts of these types used. Because the type "animals" ranks high in the above evaluation it should not be used so frequently that the subject ceases to interest the pupil. There should be a proper balance between the frequency of use of the most and the least interesting types. Types about which too many selections have been written are:

fables	animals
Mother Goose	fairy tales
	folk tales

Types about which more selections should be written are:

nature	geography
health	kindness
science	

Teachers are of the opinion that there should be more selections written in a humorous vein and that braveryshould be emphasized in more selections.

5. The elimination of duplication is advocated by all writers who are conscious of such a problem. Comparatively large amounts of material are repeated either verbatim or in altered form. There is little evidence to indicate that the problem is being solved although it apparently is not as acute as it was formerly. The attack on duplication is made for two reasons: first, it is a costly method of supplying material; second, its effect on the pupil is bad because it decreases interest and the desire to read. The writer found no experimental proof which shows that the mental attitudeof the child is affected by the use of duplicated material. Teachers' opinions indicate that in many cases duplication does affect the mental attitude of the pupil toward a given book. The responses of the teachers also indicate that duplication sometimes increases the difficulty of classroom procedure.

6. A proper vocabulary burden is one of the major problems involved in the prevention of reading disabilities. A vocabulary burden that is too great creates a situation which is extremely unfavorable to good reading habits and effective techniques of teaching. Both research studies and the opinions of teachers support the conclusion that meaningful repetition of words in context is a prerequisite for word mastery. It is essential that these meaningful repetitions be sufficient in number to insure a thorough acquaintance with the word without resorting to drill exercises.

Tabular studies show a wide variation in the number of meaningful repetitions presented in readers. This study finds the need of either supplying a different set of books for the slower learners or providing a more meaningful repetition in books now in use. If sets of books of unequal

difficulty are not available the level of difficulty should correspond to that of the slower group. On the basis of the findings of Gates (31) and the recommendations of Wheeler (84) it would be safe to conclude that words to be mastered should be repeated not less than twenty times in regular class reading.

Another phase of the vocabulary problem is the proper number of words common to the vocabularies of two or more books of approximately equal difficulty. The percentage of words common to two or more books is generally not very great. The supplementary readers used should repeat many of the words used in the basic reader or the previous supplementary reader for purposes of review and the introduction of new words. There is no evidence as to what the percentage of words common to two or more readers should be. In order to prevent the introduction of too many new words it is evident that the supplementary reader chosen should be the one which contains the highest percentage of words common to the reader previously used.

7. Several research studies recommend the use of frequency tables as a means for finding the best materials of reading with respect to duplication of selections in two or more books, meaningful repetition of words in any one book, and common use of words in two or more books. The writer feels that the above procedure will only render first aid instead of effecting a cure of these weaknesses.

8. The traditional grade placement of materials offers no assurance that selections are of proper difficulty and of interest in the grade in which they are placed. It is desirable that children's reactions as to

interest and difficulty be taken into consideration in the development, selection, and organization of the materials of reading. There is a necessity for regrading many reading selections on the basis of pupil interest and difficulty.

9. Desirable "primary or irreducible" factors of interest of high or favorable value as determined by Gates (32) and Dunn (23) are:

surprise	humor
animalness	familiarity
conversation	repetition
plot	poeticalness
liveliness	childness
narrativeness	

Superior selections in the various types of material invariably contain two or more primary factors of interest.

10. Few definite conclusions on the hygienic requirements of a printed page can be given because what experimental proof exists is mostly contradictory. White unglazed paper and black ink provide the best contrast with the least glare for ease in reading. The less ornate styles of type are more legible. Type set with some leading is more legible than type set solid. Bamberger's findings on"physical makeup" should serve as tentative standards. Regular margins are preferred. The majority of experimental evidence favors a line with a maximum lengthof 90 millimeters. Conclusions concerning the most desirable size of type are not possible because of conflicting evidence. Shaw's standards forwhich no experimental proof apparently exists are approximated in school books. Buckingham's recent comprehensive study produced evidence which disagrees with Shaw's standards. Buckingham's study is significant because it offers a new measure, a com-

parison of cost and legibility, of the desirability of a type page.

Recommendations

The recommendations are as follows:

1. It would be well to watch the materials included in textbooks for unnecessary difficulties of diction. Material may be well-written and seemingly appropriate but certain forms of expression may be entirely foreign to the way the primary child may naturally but correctly express himself. Selections that give trouble to pupils should be subjected to analysis and experimentation. It is much wiser to exclude a troublesome selection from class use than present unnecessary obstacles by insisting on using a selection because it is in the textbook. Children's reactions as to their interest in selections should be noted and should serve as a guide in making more interesting or eliminating the uninteresting material.

2. It seems advisable that the use of textbooks containing more factual material should be encouraged. Studies have shown that the child is undoubtedly as much interested in facts about life which he comprehends, as the adult is about facts in his world. It would be difficult to say just what per cent of the selections should be factual. Perhaps the only measure of the proper amount is how well the interest of the pupil stands the addition of more factual material. The best use of factual material seems to be in conjunction with imaginative where the two combine to complete a unit of work.

3. A happy balance should be struck in the use of poetry. In some books it may be inadvisable to use all of the poetry as class material

because too much is presented. In other books the amount may have to be supplemented. From the standpoint of interest some classes may require more poetry than other classes. It cannot be assumed that because poems are presented in a given grade that they are always appropriate for that grade. A critical evaluation and possible elimination of poems that are troublesome, coupled with a flexibility of use, should do much to make this kind of material more desirable and useful.

4. It is impractical, although possible, to effect a solution of the problem of duplication of selections by the use of frequency tables. After a book containing the fewest duplications has been chosen through the use of a frequency table it may be necessary to omit some of those selections which were used in previous books. This is a costly method with respect to both the laborious production of a frequency table and the possible waste of buying and then not using part of the book. Buying textbooks from one publisher who does print plenty of supplementary material with no duplications would prove to be a cheapand adequate way to solve the problem.

5. The use of frequency tables, pertaining to the number of meaningful repetitionsof words in a given book and to the number of words common to the vocabularyof two or more books, as a method for evaluating the vocabularies of textbooks, can only partially solve the problem of proper vocabulary burden. After an evaluation the book selected would be the one which came nearest to meeting the requirements of a proper vocabulary burden. This method does not provide the best possible control of the problem. The frequency of meaningful repetition of words in one book could be controlled by one publisher. The control of the vocabulary used in

in supplementary readers so that the percentage of words common to several readers is large enough is only possible if all of the readers are bought from the same publisher. In all probability, publishers when assured that the use of their basic textbooks would also include the use of their supplementary readers, could and would supply a sufficient number of sets of supplementary readers.

6. An evaluation should be made of selections that give trouble in any given grade. A poor showing on the part of the pupil may be due to improper difficulty of the selection. Traditional grade placement offers no assurance that selections are of proper difficulty in the grade in which they are placed.

7. Some little thought might be given to the question of whether "animalness" and "childness" belong to the group of "irreducible" factors of interest presented in conclusion number nine. An examination of the list shows that all factors with the possible exception of "animalness" and "childness" can be used as a way of writing about various subjects. "Animalness" and "childness" are apparently subjects of selections. This suggests that "irreducible" factors of interest in materials of reading might consist solely of fundamental ways in which subjects of selections are treated.

8. Several suggested problems for further research are:

(1) A study to determine whether the use of a list of words intended to be learned or mastered by the pupil wouldprovide a measure of or promote growth of reading ability when used as a teaching device. The mastery list could be made up of those words appearing most frequently in textbooks of

reading.

(2) A study to determine if the mental attitude of a child toward reading is affected in any way when he comes in contact with duplicated selections in reading matter.

(3) A study to determine how well an adequate number of supplementary books, in conjunction with a basic textbook from the same publisher, solve the problems of duplication of selections, proper frequency of meaningful repetitions, and words common to two books used in progressive sequence.

(4) More objective evidence is needed as to what combinations of type size, line length, and leading is optimum for primary books. Consideration should be given to fatigue of reading, speed of reading, and cost of printing.

MILLARD R. SCHNELLER
2216 MORSE AVENUE
CHICAGO, ILLINOIS

September 24, 1935

To The Principal

Dear Sir or Madam:

As a necessary step in the completion of my thesis at Loyola University, Chicago, the enclosed check list should be evaluated by primary teachers. I believe there is enough merit in the check list to warrant an interested participation of your first, second, and third grade teachers.

Would you be so kind as to have distributed to teachers in each of the first three grades one of the enclosed envelopes.

Enclosed is an extra copy of the check list for your files.

Very sincerely,

Teacher and Graduate Student

CHECK LIST ON THE CHARACTERISTICS OF PRIMARY READING MATERIALS

Study by

Millard R. Schneller, (Teacher and Graduate Student)

2216 Morse Ave.

Chicago, Ill.

September 17, 1935

Name.....

Address..... School_____

City..... Teacher in Grade.....

State..... Years of Teaching Experience.....

Dear Madam:

Your kind consideration is respectfully requested in answering the following check list. The results will be used in completing a thesis at Loyola University, Chicago, Illinois.

As your reply will show your interest in this study a brief summary of the thesis with the results of the check list will be mailed to you upon the completion of the thesis.

The check list is comparatively long but requires little writing. A prompt reply will be appreciated.

Very sincerely,

Undecided: Undecided indicates any response which cannot with reasonable certainty, be answered by a "Yes" or "No."

Indicate your answer with a check.

In several questions answers are to be inserted in the blank space.

Contents of Readers

1. Is material that is well-written, of proper difficulty, and interesting, other than so-called "good literature," desirable in primary reading books? Yes..... No..... Undecided.....

2. Should more informational or true-to-fact material be included in primary reading books? Yes..... No..... Undecided.....

3. Is there too much poetry included in primary reading books? Yes..... No..... Undecided.....

4. In general would you say that poetry is liked by the children? Yes..... No..... Undecided.....

5. Is there too much duplication of the same selection, or selections altered to make them seem different, in various reading books? Yes..... No..... Undecided.....

6. If there is duplication has it:

   a. Affected in any way the mental attitude of the pupils toward reading a particular book? Yes..... No..... Undecided.....

   b. Increased the difficulty of class procedure? Yes..... No..... Undecided.....

7. If you use basic and supplementary readers from more than one publisher indicate:

   a. The number of publishers from whom books have been bought. (Include only sets of books for class use.) .....

   b. The number of sets of books. .....

8. Studies have found the following types of material in primary textbooks. Undoubtedly some types are more valuable than others because: (1) they are more interesting to the children, (2) they offer a kind of information or training that is essential. Taking into consideration the above facts evaluate each type of material according to the four point scale of:

1. Great value	3. Doubtful value
2. Good value	4. Negative value

(Draw circle around number indicating value.)

Animals	1	2	3	4	History	1	2	3	4
Fables	1	2	3	4	Honesty	1	2	3	4
Mother Goose and Nursery	1	2	3	4	Politeness	1	2	3	4
					Industry	1	2	3	4
Fairy Tales	1	2	3	4	Civics	1	2	3	4
Geography	1	2	3	4	Folk Tales	1	2	3	4
Health	1	2	3	4	Science	1	2	3	4
Nature	1	2	3	4	Humor	1	2	3	4
Kindness	1	2	3	4	Home Life	1	2	3	4
Bravery	1	2	3	4	Child Life	1	2	3	4
Affection	1	2	3	4	Interesting Characters	1	2	3	4
Duty	1	2	3	4					

9. Are there in one or more reading books, too many selections written about certain types of material?

Yes..... No..... Undecided.....

a. If so, what types of material contained too many selections?

.....

.....

.....

10. Are there types of material which do not have enough selections written about them in reading books?

Yes..... No..... Undecided.....

a. If so, in what type of material should there be more selections?

.....

.....

.....

Difficulty of Material

11. Have you found it difficult for children to master words because the rate of introduction of new words is too great?

Yes..... No..... Undecided.....

12. Have you found it difficult for children to master words because supplementary readers differ too much from each other and the basic reader in vocabulary content? Yes..... No..... Undecided.....

13. Are meaningful repetitions of a word in context a prerequisite for word mastery regardless of what use may be made of drill exercises such as flash cards, etc.? Yes..... No..... Undecided.....

14. Do textbooks repeat words to be mastered a sufficient number of times in meaningful settings for:

a. The bright student? Yes..... No..... Undecided.....

b. The average student? Yes..... No..... Undecided.....

c. The dull student? Yes..... No..... Undecided.....

15. Did you ever have to evaluate or choose either basic or supplementary textbooks in reading? Yes..... No.....

If so,

a. Did you make use of frequency tables showing the number of duplicated selections in the various readers under consideration? Yes..... No.....

b. Did you make use of tables showing the total number and the frequency of word recurrence (meaningful repetition in context) in the readers under consideration? Yes..... No.....

c. Did you make use of tables showing the words common to the various readers under consideration? Yes..... No.....

Reading Interests

16. Do you find that informational selections are as much liked as fiction or the purely imaginative material? Yes..... No..... Undecided.....

17. Are there many instances where selections are decidedly out of place in the grade in which they are taught? Yes..... No..... Undecided.....

a. If so, is this caused by an apparent lack of proper difficulty? Yes..... No..... Undecided.....

b. If so, is this caused by an apparent lack of interest in the selection? (Context difficulty may result in lack of interest.) Yes..... No..... Undecided.....

18. Should children's reactions as to difficulty and interest be taken into consideration in the selection and organization of materials of reading? Yes..... No..... Undecided.....

Bibliography*

1. Anderson, E.W. and Keeler, Lewis, "A Critical Analysis of the Kansas School Readers," University of Kansas Bulletin of Education 1:5-9, April, 1927

2. Bamberger, Florence E. The Effect of the Physical Makeup of a Book upon Children's Selections. Johns Hopkins University Studies in Education, No. 4. Baltimore, Maryland: The University, 1922, vii 162p.

3. Beck, Mae Miller. "The Vocabulary of First Readers," Peabody Journal of Education 7:224-27, January, 1929.

4. Blackhurst, James H. "Size of Type as related to Readability in the the First Four Grades," School and Society 16:697:700, December 16, 1922.

5. Blackhurst, James H. Investigations in the Hygiene of Reading. Baltimore: Warwick and York, 1927, 64p.

6. Blackhurst, James H. "Hygienic Standards in Type and Format of Reading Materials." Elementary English Review 5:101-3, 118 April, 1928.

7. Blackhurst, James H. "Typography of Elementary School Readers." School and Society 14:407-8, November 5, 1921.

8. Blackhurst, James H. "Length of Line as Related to Readability in the First Four Grades." School and Society 18:328-30, September 15, 1923.

9. Blackhurst, James H. "Leading as Related to Readability in the First Four Grades." School and Society 17:363-364, March 31, 1923.

10. Brown, M. Ethel. "A Mastery Vocabulary in Primary Reading," Second Yearbook. Washington, D.C.: National Education Association, Department of Elementary School Principals, 1923. p.296-306.

11. Bruner, Herbert. "Determining Basic Reading Materials Through a Study of Children's Interests and Adult Judgments." Teachers College Record 30:285-309, January, 1929.

12. Buckingham, B.R. "What Should Children Read in School?" Journal of Educational Research 9:13-21, 109-116, January, February, 1924.

13. Buckingham, B.R. The Textbook in American Education." Thirtieth Yearbook, Part II. National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Company, 1931 p.93-126.

14. Burnham, William H. "Outline of School Hygiene." Pedagogical Seminary 3:9-71, June, 1892.

15. Cooper, Ruby. "Overlapping of Content in Elementary Reading." Elementary School Journal 32:542-45, March, 1932.

16. Committee on Reading, Reprt. of. "Appropriate Materials for Instruction in Reading." Twenty-Fourth Yearbook, Part I. National Society for the Study of Education, Bloomington, Illinois: Public School Publishing Company, 1925. p. 161-218.

17. Danforth, Marie Lusk. "Purpose in the Selection and Arrangement of Material in Supplementary Readers." Elementary School Journal 33:427-433, February, 1933.

18. Dawson, Mildred A. "Materials of a Historical Nature Contained in Twenty-six Primary Readers." Elementary School Journal 33:427-433, February, 1933.

19. Dearborn, Walter F. The Psychology of Reading. New York: Science Press, 1906, 136p.

20. Dolch, Edward W. The Psychology and Teaching of Reading, New York: Ginn and Company, 1931, v 331p.

21. Dolch, Edward W. "Combined Word Studies." Journal of Educational Research 17:11-19, January, 1928.

22. Dowell, Pattie S. and Garrison, K.S. "A Study of Reading Interests of Third Grade Subjects." Peabody Journal of Education 8:202-6, January, 1931.

23. Dunn, Fannie F. Interest Factors in Primary Reading Materials. Contributions of Education, No. 113. New York: Bureau of Publications, Teachers College, Columbia University, 1921, 70p.

24. Eckert, Mollie Horton. "Children's Choices of Poems." Elementary English Review 5:182-85, June, 1928.

25. Escher, Marie T. The Validity of Phrases in Primers and First Readers. Unpublished Master's Thesis, University of Pittsburgh, Pittsburgh, Pennsylvania, 1928.

26. Fishback, Archer W. The Effect of Different Types of Discourses on Comprehension Ability in Silent Reading. Unpublished Master's Thesis, Indiana University, Bloomington, Indiana, 1925.

27. Garnett, Wilma Leslie. "A Study of Children's Choices in Prose." Elementary English Review 1:133-37, June, 1924.

28. Garnett, Wilma Leslie. "Factual versus Story-factual Material." Elementary English Review 3:268-71, October, 1926.

29. Gates, Arthur I. "Problems in Beginning Reading Suggested by an Analysis of Twenty-one Courses." Teachers College Record 26:572-91, March, 1925.

30. Gates, Arthur I. "The Construction of a Reading Vocabulary for the Primary Grades." Teachers College Record 27:625-42, March, 1926.

31. Gates, Arthur I. Interest and Ability in Reading. New York: Macmillan and Company, 1930. xii 264p.

32. Gates, Arthur I.; Pearden, C.C.; and Sartorius, I.C. "Studies of Children's Interests in Reading." Elementary School Journal 31: 556-70, May, 1931.

33. Gates, Arthur I. "What Do We Know about Optimum Length of Lines in Reading?" Journal of Educational Research 23:1-7, January, 1931.

34. Gilliland, Adam R. "The Effect on Reading of Changes in the Size of Type." Elementary School Journal 24:138-46, October, 1923.

35. Grant, Emma B. and White, Margaret L. "A Study of Children's Choices of Reading Materials." Teachers College Record 26:671-78, April, 1925.

36. Grant, Emma B. and White, Margaret L. "Reading Interest Compared with the Content of School Readers: A Study of Reading in the Primary Grades." Teachers College Record 26:480-97, February, 1925.

37. Gray, William S. Summary of Investigations Relating to Reading. Chicago: Chicago University Press, 1925. v 321p.

38. Gregory, C.A. "The Reading Vocabularies of Third-Grade Children." Journal of Educational Research 7:127-31, February, 1923.

39. Griffing, Harold, and Franz, S.T. "On the Conditions of Fatigue in Reading." Psychological Review 3:513-30, September, 1896.

40. Hales, Ethel M. Selection of Reading Texts for Grades I, II, and III. Unpublished Master's Thesis, University of Iowa, Iowa City, Iowa, 1924.

41. Harris, Julia M.; Donovan, H.L.; and Alexander, Thomas. Supervision and Teaching of Reading. Chicago: Johnson Publishing Company, 1927, xxi 474p.

42. Heller, Regenia R. and Courtis, S.A. "Exercise Developed at Detroit for Making Reading Function." Twentieth Yearbook, Part II. National Society for the Study of Education, Bloomington, Illinois: Public School Publishing Company, 1921. p.153-61.

43. Hosic, James F. "The Contents of School Reading Books." School and Society 11:179-80, February, 1920.

44. Housh, E.T. "Analysis of the Vocabularies of Ten Second Year Readers." Seventeenth Yearbook, Part I. National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Company, 1918. p.40-45.

45. Huber, Miriam Blanton. "Children's Poetry." Elementary English Review 3:258-61, 387-89ff., October, November, 1926. Also in Teachers College Record 28:93-104, October, 1926.

46. Huey, Edmund B. The Psychology and Pedagogy of Reading. New York: The Macmillan Company, 1919, xvi 469p.

47. Irwina, Sister M. An Evaluation of the Vocabulary Content of Twelve Series of Primary Readers. Catholic University of American Educational Research Bulletin, Vol. 4, No. 7. Washington, D.C.: The University, 1929, 52p.

48. Jones, Robinson G. "Standard Vocabulary, Minimum Standards and Current Practices in the Formal Subjects." Fourteenth Yearbook, Part I. National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Company, 1915. p.37-43.

49. Judd, Charles H. and others. Reading: Its Nature and Development. University of Chicago Supplementary Educational Monographs, Vol 2, No. 4. Chicago: Illinois: The University, 1918.

50. Kibbe, Delia E. "Duplicate Materials in Elementary Readers." Elementary English Review 4:35-41, February, 1927.

51. Kyte, George C. "Calibrating Reading Material." Elementary School Journal, 25:533-46, March, 1925.

52. Lewerenz, Alfred S. "An Experiment in Evaluating Books Read and Enjoyed by School Children." Los Angeles Educational Research Bulletin 9:10-14, September, 1929.

53. Los Angeles Public Schools. Reading: Second Yearbook of the Division of Educational Research. School Document No. 21. Los Angeles, California: Board of Education, 1919, p. 56-85.

54. Mackintosh, Helen K. "A Study of Children's Choices of Poetry." Elementary English Review 1:85-89, May, 1924.

55. McKee, Paul. " 'Fact' Form and 'Story' Form Reading Matter." Elementary English Review, 3:3-8, January, 1926.

56. Miller, W. Samuel. A Critical Analysis of the Vocabulary of Ten Third Readers. Unpublished Master's Thesis, University of Iowa, Iowa City, Iowa, 1916.

57. Morgan, Joy Elmer (Editor). "The Need for Educational Interpretation." Journal of the National Education Association 19:37938,

58. National Society for the Study of Education. "Essential Objectives of of Instruction in Reading." Twenty-Fourth Yearbook, Part I. Bloomington, Illinois: Public School Publishing Company, 1925. 339p.

59. Nesmith, Mary E. An Objective Determination of Stories and Poems for the Primary Grades. Contributions of Education, No. 255. New York: Bureau of Publications, Teachers College, Columbia University, 1927. 86p.

60. O'Shea, Harriet E. A Study of the Effect of the Interest of a Passage on Learning Vocabulary. Contributions to Education, No. 351. New York: Bureau of Publications, Teachers College, Columbia University, 1930, 122p.

61. Packer, J.L. "The Vocabularies of Ten First Readers." Twentieth Yearbook, Part II. National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Company, 1921. p. 127-144.

62. Patterson, Samuel W. Teaching the Child to Read. New York: Doubleday Doran and Company, Incorporated, 1930. xii 524p.

63. Phillips, Marina. "Duplication of Content in Texas State-adopted Textbook Readers." Texas Outlook 13:23-61, October, 1929.

64. Power, Leonard. A Statistical Study of Minimum Word-Recognition Requirements for the First Grade. Unpublished Master's Thesis, University of Chicago, Chicago, Illinois, 1927.

65. Rankin, Mary Isabel. "A Study of the Recurrence of Words in Certain Primers." Elementary School Journal 28:278-85, December, 1927.

66. Roethlein, Barbara Elizabeth. "The Relative Legibility of Different Faces of Printing Types." American Journal of Psychology 13: 1-36, January, 1912.

67. Selke, Erich, and Selke, G.A. "A Study of the Vocabularies of Beginning Books in Twelve Reading Methods." Elementary School Journal 22:745-49, June, 1922.

68. Shaw, Edmund R. School Hygiene. New York: The Macmillan Company, 1901. xi-255p.

69. Smith, Nila B. "An Investigation in Children's Interest in Different Types of Stories." Detroit Educational Bulletin 9:3-4, February, 1926.

70. Smith, Nila B. "The Construction of First-Grade Reading Material." Journal of Educational Research 17:79-89, February, 1928.

71. Starch, Daniel. "The Contents of Readers." Twentieth Yearbook, Part II National Society for the Study of Education. Bloomington, Illinois: Public School Publishing Company, 1921, p.145-151.

72. Stone, Clarence R. "Grading Reading Selections on the Basis of Interest." Educational Method 10:225-30, January, 1931.

73. Stone, Ralph E. "Duplication of Reading Material in Fifteen Second-Grade Readers." Elementary School Journal 20:702-710, May, 1920.

74. Teal, Fred L. Duplication in School Readers. Ohio State University Educational Research Bulletin, Vol. 5, No. 17. Columbus: College of Education, Ohio State University, 1926, p.357-59.

75. Thompson, Blanche Jennings. "Children's Literature and the Machine Age." Educational Method 13:167-82, December, 1933.

76. Thorndike, Edward L. Teachers' Word Book of Twenty Thousand Words. New York: Bureau of Publications, Teachers College, Columbia University, 1931, vii-182.

77. Tinker, Miles A. and Paterson, Donald G. "Influence of Type Form on Speed of Reading." Journal of Applied Psychology 12:359-68, July, 1928.

78. Tinker, Miles A. and Paterson, Donald G. "Studies of Typographical Factors Influencing Speed of Reading. II. Type Size and Speed of Reading." Journal of Applied Psychology 13:120-30, March, 1929.

79. Tinker, Miles A. and Paterson, Donald G. "Studies of Typographical Factors Influencing Speed of Reading. III. Length of Line." Journal of Applied Psychology, 13:205-219, April, 1929.

80. Uhl, Willis L. Scientific Determination of the Content of the Elementary School Course in Reading. University of Wisconsin Studies in the Social Sciences and History, No. 4. Madison: The University, 1924. 152p.

81. Uhl, Willis L. The Materials of Reading. New York: Silver, Burdett and Company, 1924 xiv-386.

82. Vinal, William Gould. "First Grade Readers: A Survey and Criticism." Nature Study Review 14:371-79, December, 1918.

83. Wheeler, H.E. "Suggestions for Research on the Typography of School Textbooks." Elementary School Journal 29:27-31, September, 1928.

84. Wheeler, H.E. and Howell, Emma A. "A First Grade Vocabulary Study." Elementary School Journal 31:52-60, September, 1930.

85. Wiley, W.E. "Difficult Words and the Beginner." Journal of Educational Research 17:278-89, April, 1928.

86. Woody, Clifford. "The Overlapping in the Content in Fifteen Readers." Journal of Educational Research 2:165-74, June, 1920.

* Note: This is a selected bibliography; every one of the above references was used one or more times.